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THE UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled:

Final Visual Presentation

Submitted by Milena Radzikowska in partial fulfillment of the requirements for the degree of Master of Design.

DESIGNING

A TASK-BASED WEB APPLICATION

Can a Web application be designed to meet the information-seeking, service, and support needs of women with breast cancer, in ways that are faster, easier and more pleasurable?



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Winter 2004

to *Anna Radzikowska*
for my life

to *Leszek Lewandowski*
for my life here

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ABSTRACT

This thesis demonstrates how a task-based Web application could be designed to function as a significant, positive intervention in the lives of individuals, by using an interdisciplinary approach to investigate the needs of a user group selected for the intervention. Specifically, this design research project involved the design of a Web application to serve some of the information, service, and support needs of women with breast cancer, at the different stages of their illness. By applying interdisciplinary research methods and design practices, as well as developing personae and scenarios, the likelihood of providing women with breast cancer with a more complete set of appropriate tools to gain information, complete tasks, and receive support was increased. Furthermore, by providing women with breast cancer with a single credible and customizable source for some of their breast cancer-related needs, these needs could be met in a way that is faster, easier, and more pleasurable than they could be fulfilled in the physical world.

KEYWORDS

Web site design, Web application, Web, Internet, interface design, design for breast cancer patients, personae, scenarios, task categories, user-centred design, personalization

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INTRODUCTION

Designing a Task-Based Web Application is a design research project that uses an interdisciplinary approach by building on research and methods from a number of fields: visual communication design, psychology, usability, computer science, and health care. My goal was to design a task-based Web application to meet some of the needs of a specific user group: women with breast cancer, in a manner that would be faster (Nielsen, 2000), easier (Nielsen, 2000), and/or more pleasurable (Jordan, 2000) than if fulfilled in the physical world. This document outlines the process of designing a Web application through a user-centred approach, describes an innovative use of personae and scenarios within the design process. It concludes with a series of recommendations for design researchers and practitioners interested in working in a similar vein, and for those interested in moving this particular project further.

Task-based – an artifact meant to facilitate the completion of activities by a user.

User group – a specified demographic group for which a particular communication strategy, product, or environment is designed. This term is used most often when referring to digital interfaces, but is similar in meaning to *target audience* (the term I used in the Web site critiques).

Web-based application – software based on the Web. This can refer to almost anything Web-related, including a Web browser or other client software that can access the Web (TechWeb, 2003). In this context, it means a Web site that is stored on the user's computer, but that also connects to the Web to update and download additional content, and connect with other users.

Intervention – the action of stepping into any affair, so as to affect its course or issue. This word has a positive definition, as in: acting as a mechanism towards positive social change (Frascara, 1999).

ORIGINS OF THE PROJECT

Web application design (see Figure 1), as a sub-set of digital interface design, can be considered from a number of perspectives. In a broad sense, it deals with the communication between a human being and a digital environment, in whatever form (computer, cell phone, bank machine, etc.). Communication, including the role played in communication by an interface, is a fundamental human activity. It is in this latter context that Frascara (1997, p. 3) noted:

The act of designing visual communication artifacts, whether they are printed, constructed, or programmed, is an activity directed at affecting knowledge, the attitudes and the behavior of people.

Bowers (1999) wrote that design emerges out of fundamental human needs. Design is able to satisfy these needs most successfully when it addresses broader issues of individual or shared problems and conditions (Bowers, 1999).

Our planet is not lacking in human problems and conditions that are desperately in need of some form of intervention. Some of my past professional experience falls in the area of interface design for a health information Web site, and my interest in that area remained. I wanted, through this thesis project, to explore this aspect of design in greater detail. Coble (qtd in Stevens, 1998) stated that involving design in the presentation of health information is “of tremendous importance to all of us...It is critically important that health care systems of all kinds (from medical devices to patient care delivery tracking systems) be well designed from a user interface perspective.” (para. 3).

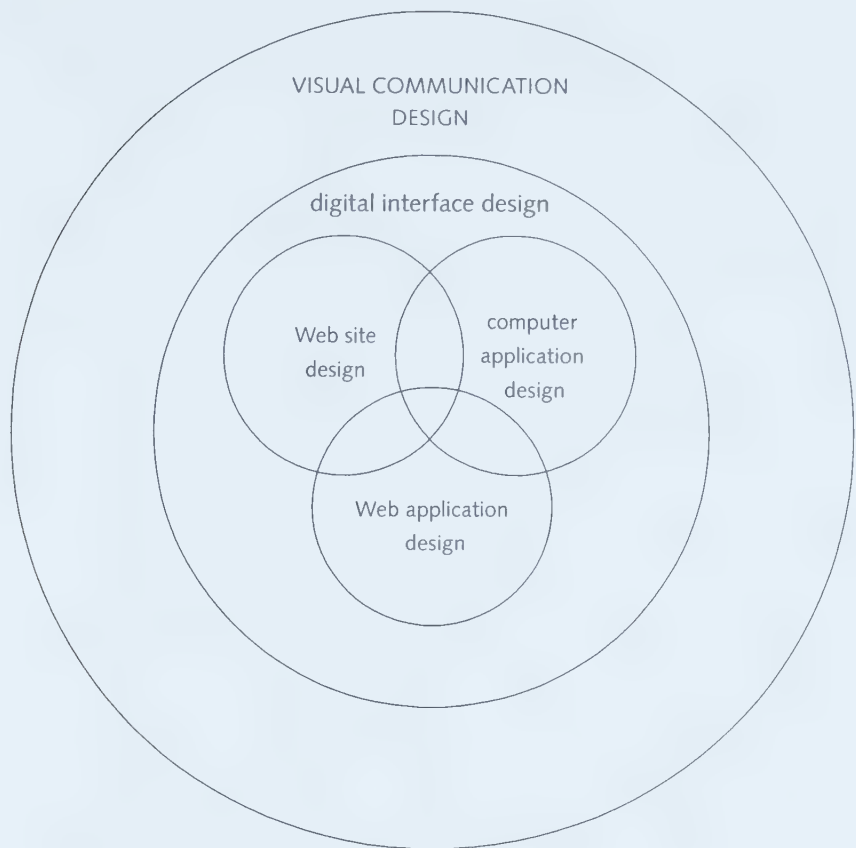


Figure 1 Discipline diagram

Internet – for the purpose of this paper, it is synonymous to the World Wide Web, Web, and digital or online environment.

Interface – (1) the point of interaction or communication between a computer and any other entity, human or electronic. (2) The layout of an application's graphic or textual controls in conjunction with the way the application responds to user activity. (from Computer Science)

Within these contexts, my goal was to explore the design of a Web application that intervenes, in a positive manner, in the lives of human beings. I wanted to make a positive contribution both to the visual communication design community and to the health care field by developing an approach to the design of Web applications that focused, at its core, on the specific needs of a user group. In this project, theory, research, and practice support and inform one another. I used my past experience as a professional Web interface designer, in combination with practical and research-based design knowledge.

In order to explore this question, I selected an existing situation that would benefit from some intervention. Increasingly, users seek health information via the Internet, with more than 70,000 Web sites disseminating health information and over 50 million people seeking health information online (Cline & Haynes, 2001). Health Canada has identified the development of a “health infostructure” (Office of Health

and the Information Highway, 2003, para. 2) as an important undertaking for the 21st century. Health infostructure refers to “the development and adoption of modern systems of information and communications technologies (ICTs) in the Canadian health care system” (Office of Health and the Information Highway, 2003, para. 2).

The Canadian Government asserts that these kinds of systems will have a number of benefits (Office of Health and the Information Highway, 2003, para. 4):

1. Improve communication between health care providers; between health care providers and patients; and between health care providers and the general public;
2. Provide individuals and communities with the information and resources that they need in order to make informed choices about their health and Canada’s health care system;
3. Create an environment for greater accountability;
4. Provide opportunities for continuous improvement to the health care system; and
5. Offer a better understanding of the foundations of health.

Adding to this is the benefit of creating support communities amongst patients with similar health or life situations (Smith, 1998), and the benefit of providing house-or institution-bound patients with task-management resources. Based on the benefits recognized by the Canadian Government and researchers within the health care and information design fields, exploring the design of a type of health infostructure system (in the form of a Web application) is clearly significant.

This Web application can have a significant impact only if it is actually used by somebody. Since generic visual communication designs intended to reach everybody may reach only a few, the designer must use segmentation techniques in order to gain a deeper understanding of the user group (Frascara, 1997). For an intervention to be successful, the user group must be substantial, reachable, reactive, and measurable (Frascara, 1997). In other words, a designer has to determine which group of people has most to gain from the intervention; whether that group can be identified from within the general public; whether the group is large enough to justify the resource expenditure; and whether the group can be reached by the intervention? How the segmentation criteria are defined and how the user group is segmented within the criteria emerges from an analysis of the situation at hand, and from a clear definition of the people most affected by this situation. Empirical research methods can be used in order to gain a more informed understanding of the situation, content area, and user group.

Web applications are highly specialized. However, a Web application can be quite similar to a Web site, with two, most common, differences:

1. *Location of the main program files* – on a server in the case of a Web site, and on the user's computer in the case of a Web application; and
2. *Accessibility of the interface to the general public* – open to all those connected to the Internet in the case of a Web site, and open to a select few who have been given access (through purchase or membership) in the case of a Web application.

A Web application can function in exactly the same way as a Web site – virtually indistinguishable to the eye of the average user. It also possesses a few key advantages over a Web site, that will be discussed in greater detail in Section 5.

Statistics regarding Web application use are not readily available. However, statistics regarding Web site use within the health care field reveal that, in 2002, looking for health/medical information was the third most common activity for Canadian “surfers” (preceded by email use and general browsing), occurring in 32.8% of all Canadian households (Statistics Canada, 2003). Health care is one of the topics most often searched for online by women (Goldstein, 2000). The popularity of the Internet when it comes to searching for health information is mostly due to the anonymity and autonomy that it offers when searching for information on topics such as low sex drive, eating disorders, or breast cancer (Goldstein, 2000). The Web empowers women to seek health information and answers to their health questions and concerns on their own, in the privacy of their own homes. One popular health site, *iVillage®*, counts ninety-one million (*iVillage®*, 2003) unique visitors every month.

Of the myriad of issues that currently exist in the health care field, I chose breast cancer as an area where, if a positive impact could be made, it would be significant. The Canadian Cancer Society (2003) reports that, in Canada, breast cancer continues to be the most common cancer in women – an estimated 21,100 new cases of breast cancer in women will be diagnosed in 2003 compared to 9,000 new cases of lung cancer and 8,300 new cases of colon cancer in women. Breast cancer is the second leading cause of cancer death in Canadian women, after lung cancer. It is estimated that 5,300 Canadian women will die of breast cancer in 2003. A woman goes through a number of stages when dealing with the disease, each one creating its own set of needs and obstacles. The breadth of impact on a woman's life may be indefinite – women with breast cancer may experience the impact of the disease, emotionally

and/or physically, from the moment of diagnosis through the woman's entire life span (Canadian Breast Cancer Society, 2003).

Breast cancer incidence and mortality rates vary between the provinces and territories of Canada: British Columbia, Manitoba, Saskatchewan and Alberta have higher incidence rates while having lower mortality rates when compared with the Canadian average (Health Canada, 2003). After considering all of this data, exploring the potential positive impact that the design of a Web application could make on the lives of women with breast cancer is clearly a worthwhile endeavor.

In order to gain an insight into what specific, positive role a Web application could play in the life of a woman with breast cancer (the user group), I focused on design's potential of addressing human needs (Bowers, 1999). Maslow (qtd in Boeree, 2004), in his theory of hierarchy of human needs, proposed that human beings are motivated by unsatisfied needs, and that certain lower needs need to be satisfied before higher needs can be satisfied (see Figure 2). Maslow's hierarchy of needs is structured according to a pyramid, ranging from the lowest-level need at the bottom, to the highest-level need at the top: physiological, safety, love, self-esteem, and self-actualization. There are three types of needs: information needs (Goldstein, 2000; Sharp, 2001), service needs, and support needs (Weinberg & Schmale, 1996; Smith, 1998; Sharp, 2000), that have been identified as relevant to women with breast cancer. They correspond well with Maslow's theory, and fit into the pyramid's broad categories. However, establishing that breast cancer patients possess needs that can be fulfilled through a Web application is not enough. Exploring whether or not these needs could be met in a way that is better – faster, easier, and/or more pleasurable – than if fulfilled through physical means, is central to this design research project.

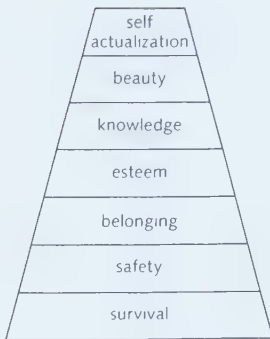


Figure 2 Pyramid of Needs
(qtd in Boeree, 2004)

When discussing the needs of the women with breast cancer user group, I focused on the tasks that these users typically had to perform through physical means in order to satisfy these needs. At this point, a number of questions emerged that directed the course of this project:

1. What kind of tasks could users currently perform on the Web?
2. Are there any benefits associated with performing these tasks on the Web (are they faster, easier, or more pleasurable), as opposed to being performed in the physical world?
3. Are there any tasks that are unique to the lives of women who have breast cancer?
4. Are women who have breast cancer currently performing any of these tasks online?

5. Why are they performing them online, or why are they not?
6. Are there any tasks that these women wish to perform online that they currently can not?

SCOPE OF THE PROJECT

In order to answer the six directing questions listed above, and then answer the central question – can a Web application be designed to faster, easier, and more pleausrably meet the information seeking, service, and support needs of women with breast cancer – my process through this project (illustrated in detail in Figure 3), consisted of three phases, each one with a particular set of project goals:

1. *Problem definition phase* – I chose a situation that could benefit from an intervention, and the user group targeted for that intervention, and created a plan for gathering the tools and knowledge needed to construct that intervention;
2. *Problem analysis phase* – I gathered tools and knowledge, in the form of a literature review and a series of Web site critiques, that would inform further accumulation of knowledge, and developed first prototype; and
3. *Problem synthesis phase* – I combined the goals, tools, and knowledge developed and gathered in the previous two phases, used some towards the gathering of further information (mostly to confirm or deny what I already learned), and some towards the second prototype. As the conclusion to this final phase, I integrated these separate elements (goals, tools, knowledge, and criteria) and designed the final HTML prototype for a Web application called *My Health and Hope*.

Note: I did not call the Web application *My Health and Hope* until the final iteration of the prototype.

My Health and Hope is a Web application for women who have been diagnosed with breast cancer that allows them to retrieve information relating to breast cancer such as stages, treatments, recovery process, diet, exercise, etc.; complete life tasks such as shopping; and communicate with women in similar life situations. A Web application addresses concerns relating to clarity of purpose that were revealed in the usability tests (conducted through small group interviews), and the concerns relating to security, validity, and privacy revealed in the focus groups.

A Web application is a Web site that is not generally advertised on the Web. Functioning in a similar fashion to a computer application (with some files stored on the user's computer), except with the benefits of live updates and real-time communication, a Web application can be made accessible to only a selected group

of members. How you become a member is up to the organization (Health Canada, Canadian Breast Cancer Society, etc.) that owns and is responsible for the system.

Ideally, the type of organization in charge of *My Health and Hope* would be a large breast cancer association (such as the Canadian Breast Cancer Association), or the Government of Canada, through Health Canada. Having a large, established body in charge of this system allows for access to the following:

- recent, credible, and extensive content;
- content experts; and
- resources (money and people) that would be needed to create, set-up, maintain, advertise, and administer such a system.

An intervention in the lives of individuals may require legislative and/or government support (Frascara, 1997). This Web application, if run by the government or through a large breast cancer organization (with government support), would have the potential of reaching all women who have been diagnosed with breast cancer through nurses, hospitals, doctors, social service agencies, and similar establishments.

The scope of this project extends up to the final HTML-prototype design of *My Health and Hope*. The next step would be to conduct a series of usability tests with representatives from the user group (Figure 3 illustrates the steps of the design of *My Health and Hope* that are outside the scope of this design research project). At this point, in order to have the resources to be able to proceed further, the project would need to be aligned with a funding agency. Following these tests, and the subsequent re-design, real content would be incorporated into the Web application. The user group has indicated (in past studies and through my focus groups) that quality, reliable, up-to-date content is very important to the success of a breast cancer-related Web site. Therefore, the gathering of this type of content is critical, requiring monetary commitment and engagement of health care experts such as nurses, doctors, and social workers.

This Web application would need to be integrated into current health care practices of advising breast cancer patients. An information/education campaign would need to be designed to inform nurses, doctors, social workers, and other medical professionals who come into regular contact with women who have been diagnosed with breast cancer, of the existence, benefits, and function (Kotler, Armstrong, Cunningham, & Warren, 2001) of *My Health and Hope*, so that they would begin recommending it to their patients.

As part of the process of this design research project, I demonstrated an innovative use of scenarios and personae, in that each persona was triangulated from three independent sources: the life of a real woman, comments made during the focus groups, and life stories of breast cancer survivors. The three personae I created for this project, and the accompanying six scenarios, were essential to the design of the third, and final set of prototypes for *My Health and Hope*.

PROJECT OUTCOME

The outcome of this design research project was three-fold:

1. Toolbox of design research methods;
2. Qualitative and quantitative data for future design research practice; and
3. Prototype of a Web application for women with breast cancer.

Scenario – an assumed or imagined sequence of events used to make decisions and contingency plans about future actions or events – often by contrasting two or more events.

Persona – a user archetype developed to help guide decisions about design features, navigation, interactions, or visual design. In most cases, personae are synthesized from data that has been gathered from members of the user group. This data is then written-up in short descriptions that include behavior patterns, goals, skills, and attitudes (Goodwin, 2001).

Through the course of this thesis project I expanded my repertoire of design research methods, particularly in the area of user involvement and participation. Even though I feel that I did not involve the user to the greatest possible extent within the scope of this project, I was able to plan and recommend further user involvement in subsequent project phases. Most of the design research methods that I was able to practice while designing *My Health and Hope* came from the social sciences. I was unable to practice them all, since some were simply outside of the scope of the project, but I was able to gain an insight into how such research methods are used, what resources are required, and how they inform design. Let us look at the fundamental difference between qualitative and quantitative research methods, as an example. Through the quantitative method: the survey, I gained concrete data about how many of my focus group participants, and to what extent, would be interested in specific online tasks (such as shopping, communicating, writing stories, playing games, etc.). Through the qualitative methods: focus groups and usability interviews, I gained a rich tapestry of ideas and life experiences from the participants.

The data from the focus groups and surveys include information regarding general Internet use, and perceived Web site usefulness and usability. These data support the data gathered by other researchers, and could be used, in a similar fashion, by future design researchers.

The prototype of *My Health and Hope*, itself, should exist as a resource for women with breast cancer. Planning how to make that a reality, however, was outside of the scope of this project.

DOCUMENT OUTLINE

The following pages consist of five sections, conclusion, appendices, and list of references. These sections outline the information I gathered, as well as how that knowledge was then applied to the design of *My Health and Hope*. In Section 1, I defined the situation, problem, and user group. In Section 2, I analyzed the problem through a literature review, that culminated in a set of design objectives. Section 3 consists of a description of the first and second phases of prototype development. In Section 4, I described a series of empirical research techniques that I used to gain further insight into this project: Web site critiques, usability tests via small group interviews, two focus groups and a survey. This section concludes with an additional set of design objectives. In Section 5, I described the final prototype. The Conclusion includes a set of recommendations for the future direction and stages of this project. I also described how this process could be applied to Web site design. The Appendices include some data from the Literature Review, all raw and analyzed data from the Web site critiques, three iterations of prototypes, all raw and analyzed data from two focus groups and a survey, a taxonomy of tasks, and three personae.

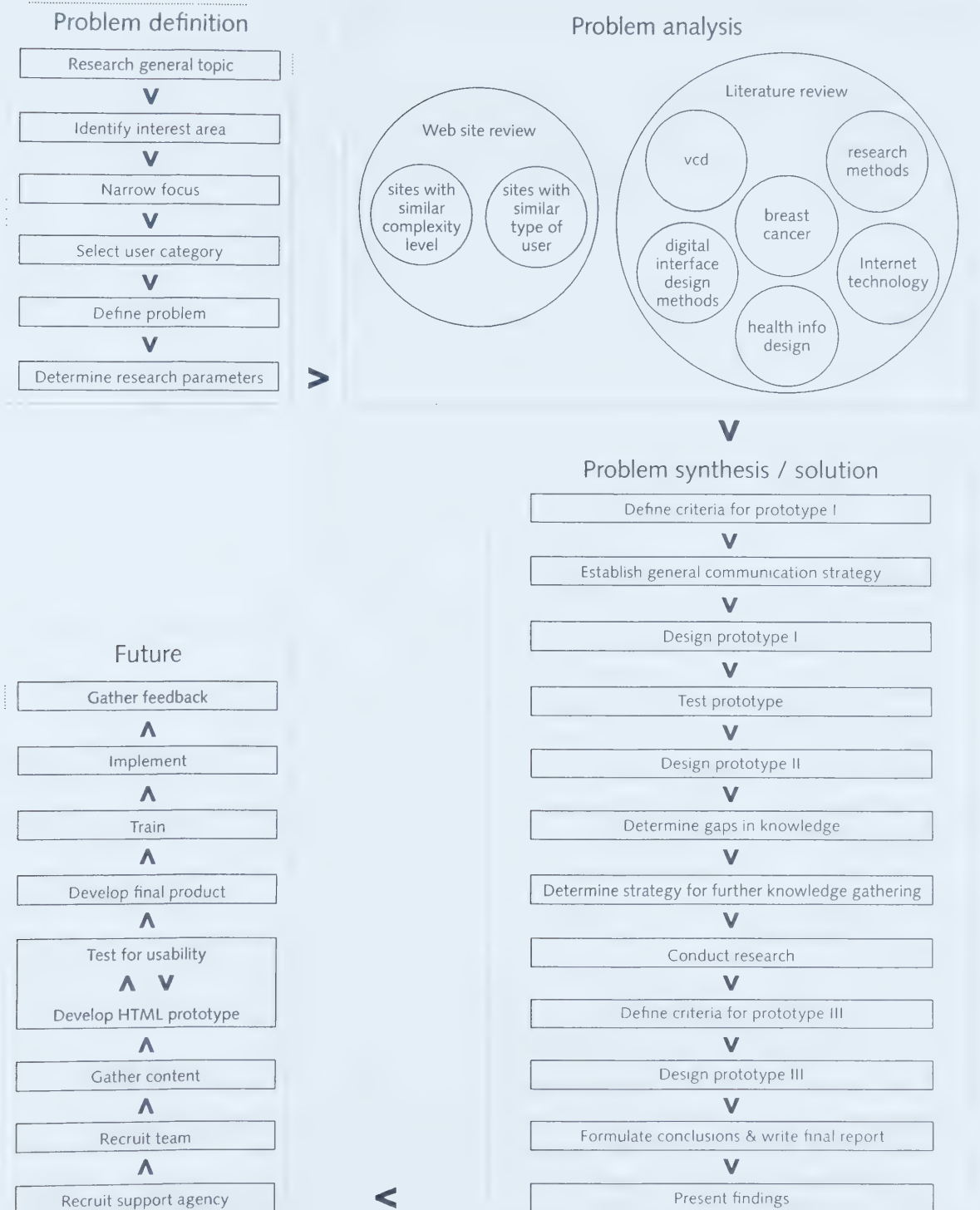


Figure 3 Process diagram

PROBLEM DEFINITION

In less than ten years, the World Wide Web has extended into nearly every facet of Western society, for a wide variety of uses. The size of the World Wide Web has grown from 2.6 billion unique Web sites in 1998 to over 8.7 billion in 2002 (O'Neill, Lavoie & Bennett, 2003). Because of the large number of sites, finding specific information and resources; comparing information and resources across a number of sources; and judging the credibility, age, and applicability of information and resources tends to be a significant challenge for average Web users. Over the last five years, the primary goal of many visual communication designers (and other professionals) who design for the Web has been to make information and resources faster, easier, and more pleasurable to find and use.

This movement towards Web usability is part of an agenda that gathered momentum in consumer product awareness at the turn of the 20th century. In the last quarter of the 19th century, significant population increase, migration from rural areas into cities, and technological improvements resulted in a broadening range of consumer products and changes in shopping behavior patterns. The 1890s, for example, saw the founding of organizations in the areas of food and hygiene, such as the Consumers' League in New York City (1891) and the National Consumers' League (1898) (Woodham, 1997). After the Second World War, the significance of consumer rights began to emerge in a more widespread societal sense. In the post-Second World War era, however, designers faced a major obstacle in assuming a more responsible, people-centred role in society – their economic dependence on business (Woodham, 1997). Radical design thinking from such theorists as Buckminster Fuller, Neutra, and Papanek became increasingly popular with designers of the 1950s and 1960s (Woodham, 1997).

According to Sless (2003), by the middle of the 20th century, designers began to expand the concept of design. This transition included a growing consideration for an object's usability. Sless adds that the 1980s saw a growth of the scope of design methods. Designers began making the transition from designing usable objects to designing long-term relationships between people and the institutions that originate these objects. Since the 1990s, designers have focused, among other concerns, on customized information which enables accurate targeting of the needs and goals of specific users. In order to better target the needs and goals of users, designers must first understand users. The social sciences can make an invaluable contribution to this process. According to Frascara (2002, p. 233):

Design is concerned with the conception and production of objects and systems that contribute to our daily lives. The social sciences' aim is the study of that very life, sometimes aiming at just understanding and discussing it, sometimes at assisting those involved with affecting it.

Designers can use qualitative and quantitative research methods, such as focus groups, interviews, questionnaires, task analysis, and many others, as a critical part of learning about a user group.

Synchronous communication – occurs in real-time – a user types a message to another user, and when he or she presses the Enter key, the other user instantly receives it. Chat Rooms are an example of online synchronous communication.

Asynchronous communication – does not occur in real-time. Internet Discussion Groups, Web forums, and email are examples of asynchronous online communication.

Learning about the user group is as critical when designing a Web site or a Web application as when designing a product or an environment. Over half a billion people world-wide have access to the Internet (Nielsen NetRatings, 2003). Developments in computer and communication technology have made email and the World Wide Web a daily experience in sixty-one percent of Canadian households (Statistics Canada, 2003). Web sites have become more complex, offering not just written content, images, and multimedia, but also enhanced interactivity, and connectivity. Users can now communicate with one another online, both synchronously and asynchronously. They can buy products, play games, manage their finances, do their taxes, try on clothing, and much more. Innovations in personalization and customization to allow users to change the content and graphical elements of a Web site to represent more accurately their needs or preferences. Users can suggest content to other users by sharing their purchase histories and writing product reviews. Users can now create their own Web sites more easily than ever before, or participate in collaborative sites by posting their thoughts and images. But can the design of these innovations fulfill specific needs for individuals?

Women who have been diagnosed with breast cancer face a wide range of physical, emotional, and social challenges during the course of their illness. The following is a brief overview of these challenges, at the three primary stages of breast cancer:

- *At the diagnosis stage* – make decisions regarding treatment, deal with the emotional impact of the news, and tell family and friends;
- *At the treatment stage* – make arrangements for post-treatment care, manage side effects; change lifestyle according to doctor recommendations; and deal with the emotional impact of treatments; and
- *At the recovery stage* – manage daily tasks; deal with social implications; and manage recovery.

Women with breast cancer must also face remission (a period of time when the cancer is responding to treatment or is under control), and the possibility of the cancer's

subsequent return. Remissions can last anywhere from several weeks to many years, and if the disease returns, another remission often can occur with further treatment (Canadian Breast Cancer Society, 2003).

A cancer diagnosis is often the beginning of a long period of medical treatments, side effects, prognostic uncertainty, disfigurement, and general disruption of life. Research into breast cancer states that when a woman is first diagnosed with the disease, she is likely to experience a wide range of emotions, including shock, fear, denial, and anger (Weinberg & Schmale, 1996). The psychological distress of most cancer patients tends to ease over time. However, between twenty and thirty percent continue to experience clinically significant distress and poorer well-being long after diagnosis (Weinberg & Schmale, 1996). In addition to the initial shock of diagnosis, women with breast cancer tend to experience a variety of evolving emotions as they go through the various stages of grief and healing. The long-term emotional impact of breast cancer makes it crucial for women to have a network of strong social support, both at the time of their diagnosis and throughout the rest of their lives (Susan G. Komen Breast Cancer Foundation, 2003).

According to the Canadian Breast Cancer Society (2003), each case of breast cancer is unique, as is each woman's experience with breast cancer. Treatments for breast cancer, as well, may be completely different from one woman to the next. Rehabilitation is a very important part of breast cancer treatment, helping women return to their normal activities of daily living. It tends to be a long process, quite different for each woman, depending on the extent of her disease, the type of treatment she received, and other factors. Also, because of the physical impact of the treatment, a woman with breast cancer may not be able to leave her home for some period of time.

Women in small or isolated communities face particular challenges upon receiving a breast cancer diagnosis. Many smaller communities lack information and emotional and physical support services for women who have been diagnosed, who are undergoing treatment, or who are in recovery. Access to breast cancer survivors who have been trained to provide information, encouragement, and emotional support; help in making financial arrangements, child care, and employment matters; and discussions about prosthesis and reconstruction have been identified as critical to the well-being of women with breast cancer who are living in isolated communities (North West Territories Breast Cancer Working Group, 1997).

Considering the needs that women face upon receiving a breast cancer diagnosis, can a Web application be designed to meet these needs in a way that is faster, easier, and more pleasurable than if fulfilled in the physical world?

I answered this question by conducting background and empirical research, and designing three prototype iterations of a Web application for women with breast cancer, called *My Health and Hope*.

BACKGROUND RESEARCH

INTERDISCIPLINARY RESEARCH PLAN

This design research project was informed by a number of research areas: visual communication design, psychology, usability, computer science, and health care.

The purpose of this multi-disciplinary approach was to gain insight into two key areas:

1. Existing research; and
2. Methods for conducting research.

In my examination of existing research into aspects of the problem area, six broad areas of knowledge emerged:

1. Human factors;
2. Web site design;
3. Internet technology;
4. Internet-use behavior;
5. User group; and
6. Research methods.

Researching Web site design guidelines was important because designing a digital interface is a fairly complex process. A typical Web site may contain a large number of elements: navigation, brand, and both written and graphical content images. The design of each needs to be considered. Research into the design of navigation systems, photo treatments, and digital type sizes (the micro-level elements), to name just a few considerations, were not the focus of this design research project – the focus was to research and apply design methods to design a Web application that met the needs of women with breast cancer (a macro-level element). Therefore, I wanted to rely on the work of experts in the area of Web site design, to direct these design choices. However, when I say “rely on,” that does not mean that I planned to take these guidelines at face value – all would need to be tested with the user group, during subsequent design and development stages of *My Health and Hope*.

Researching the types of applications currently used for online communication (personal and group chat, listsrvs, email, etc.) was an important step since, later on, I had to make a decision as to which of these, if any, would be incorporated into *My Health and Hope*. Also, many of these were discussed by researchers looking into online communication by cancer patients, and in order to fully understand their discourse, I had to understand the terminology.

Researching Internet-use behavior was also important. An object (or in this case, a Web application) that is not used by anyone has no reason to exist. Before committing time and resources into developing a Web application, I needed to know whether it had the potential to be used by people, how it was most likely to be used, and who was most likely to use it.

The two case studies included in the Literature Review, *Mobile Application for Patient Education* (Wood et. al., 2003) and *HutchWorld* (Farnham et. al., 2002), showcase the potential of a Web application in the lives of cancer patients. These two studies gave me confidence, at the start of this project, that I was on the right track, since these two groups of researchers also investigated the needs of cancer patients and designed Web applications to address these needs. The case studies also informed my initial ideas regarding the content and functionality of *My Health and Hope*.

Researching the behavior, knowledge, needs, goals, and circumstances of the user group was critical, since my goal was to apply a user-centred approach to the design of a Web application. Decisions regarding the design of *My Health and Hope* emerged from this data, as well as from the data I gathered through empirical research methods: usability interviews, focus groups, and survey.

The purpose of delving into established research methods, primarily in the social and computer sciences, was to establish a plan to gather first-hand data that would supplement, confirm, or deny information gathered about the problem area (from other researchers); to inform the design of *My Health and Hope*; and to form a plan for future testing of this Web application.

SITUATING THE PROJECT

“Design” encompasses two different poles. On the one hand, it is a fairly common word with inconsistent meaning and many usages; on the other hand, it is a practice through which human beings create a myriad of objects and environments, only some of which have any lasting value (Heskett, 2003). Design may be something clichéd and insignificant, but it can also be something very meaningful: a key factor in improving our earthly existence. This design research project is based on the belief that design can matter profoundly, when viewed through the user-centred approach, and when its goal is to make a positive intervention in the lives of people.

But how can designers perform that positive intervention? Before beginning to work with the tools of design (physical or digital materials), designers must first gain an understanding of, and knowledge in, three things (Frascara, 1997):

1. The individuals in whose lives they are trying to intervene (user group);
2. The tools that they have to work with; and
3. Their role within the process.

Without understanding the individuals' personal preferences, cognitive abilities, value systems (Frascara, 1997), and needs, designers cannot truly design for those individuals and, in the end, may end up designing for themselves. By using methods from the social sciences, designers can gain first-hand information about the users and their needs and goals. This information will then direct the design of the intervention.

Without an understanding of the tools (and medium) that they are to work with, designers cannot take advantage of the strengths of that medium, or work around its weaknesses. They are also less likely to be objective when assessing the appropriateness of that medium for the situation at hand. Without understanding their own role, designers are not able to seek outside expertise when needed. A designer is not able (as no human is able) to be an expert in or possess knowledge of all things at all times. Designers must be open to seeking collaboration with content and programming experts.

Only by working according to the three criteria listed above can designers act responsibly both towards the individual user and the community. Designers face at least four distinct areas of responsibility: professional, ethical, social, and cultural. Designers' professional responsibility guides them towards the creation of messages that are detectable, discriminable, attractive, understandable, and convincing. These messages are also ethical in that they recognize the humanity of their audience; they are socially responsible in that they make a positive contribution to their society; and they are culturally responsible in that they also make a positive contribution to the public. Designers must not limit themselves only to solving problems that have been identified by others; they themselves must identify existing problems, then strive to respond to them through visual means (Frascara, 1997).

LITERATURE REVIEW

My examination of existing research within the problem area fit into six broad categories of knowledge:

1. Human factors;
2. Web site design;
3. Internet technology;
4. Internet-use behavior;

5. User group; and
6. Research methods.

see appendix a:

Literature review template.

In order to make the best use of time when reading articles and books relevant to this design research project, I developed a Literature Review Template (see Appendix B). This template helped me to organize, retain, and build relationships between the different things that I was reading. The rest of Section 2 summarizes that research. The sub-section on Web site design is comprised of specific design guidelines developed by usability experts Jacob Nielsen (2000) and Steve Krug (2000). The sub-section on Internet technology includes the following:

- Web sites types;
- Internet communication tools; and
- Internet-use behavior.

The final sub-section summarizes information gathered that pertains to the user group:

- how women use the Internet;
- breast cancer in women;
- effects of social support on women with breast cancer;
- computer-mediated support groups; and
- case study.

Human factors

When looking at the needs of women with breast cancer, I focused on how these needs could be fulfilled in ways that were faster, easier, and more pleasurable. Abraham Maslow's *Hierarchy of Human Needs* (qtd in Boeree, 2004) views individuals as always wanting, but rarely satisfying, their needs. As soon as people manage to fulfil needs lower down the hierarchy, they then want to fulfil needs that are higher up the hierarchy. Therefore, individuals are frustrated unless they fulfill all their needs. Jordan (2000) applied the idea of a hierarchy of needs to human factors, and developed the following hierarchy of user needs:

1. *Functionality* – a design can not satisfy the needs of its user unless it contains appropriate functionality. In order to make a design functional, the designer must first understand what the design will be used for and the context and environment in which it will be used;
2. *Usability* – after it meets the needs of functionality, the design must then be easy to use; and

Human factors – the study of how people behave physically and psychologically in relation to particular environments, products, or services. The term usability is now sometimes used as an alternative to human factors (www.whatis.com).

3. *Pleasure* – after a design is both functional and easy to use, it then needs to have emotional benefits. Meeting pleasure needs means ensuring that people can relate to the design in some way, or that the design conveys some particular set of values.

Following the work of Canadian anthropologist, Lionel Tiger (qtd in Jordan 2000) describes four types of pleasure:

1. *Physio-pleasure* – pleasure derived from the sensory organs (touch, taste, and smell);
2. *Socio-pleasure* – pleasure derived from the company of other human beings;
3. *Psycho-pleasure* – pleasure derived from accomplishing a task; and
4. *Ideo-pleasure* – pleasure derived from entities such as books, music, and art.

Web site design

Since the popularization of the Internet in 1995, a number of approaches developed for designing usable computer interfaces have been adapted for the design of Web sites. Many additional ways of approaching Web site design have also been explored. The popularity of the Internet, as well as its relative ease of programming*, has created a surge of interest in Web site design and development. Individuals who would never have considered learning to program in Perl or C++ are learning to build Web sites. This rush of interest has created a market for usability guidelines that are written with the common person in mind, rather than the serious student, professional, or expert in the field. Usability experts, such as Jakob Nielsen (2000) and Steve Krug (2000), have written guidelines that are down-to-earth, easy-to-read usability principles for people who design Web sites. These guidelines tend to be fairly fundamental, including recommendations for link colors, amount of scrolling on a page, and image cropping. Guidelines change, however, as new tools, technologies, and ways of thinking develop. I feel that, though useful, existing guidelines cannot be taken at face value, but need to be assessed and tested for every project.

A researcher on the subject of Web usability, Jakob Nielsen (2000) wrote a guide for Web usability for practicing Web designers, graphic designers, Web programmers, and company owners and managers. According to Nielsen, the only way to achieve success on the Web is, first, by looking at design through the eyes of the user, and second, by practicing simplicity in design. The main goal of most Web projects should be to make it easy for consumers to perform useful tasks (Nielsen, 2000). He also provided a number of rules and guidelines (and a few methods) derived from his observations

Hypertext Markup Language (HTML)

– a markup language used to structure text and multimedia documents and to set up hypertext links between documents, used extensively on the World Wide Web.

* HTML is significantly simpler to program than programming languages such as Perl, C++, Visual Basic, or Java that are used in programming computer software.

of users using Web sites and other types of online information systems and hypertext designs. A number of his more fundamental principles are listed in Appendix B.

The main idea behind Steve Krug's guidelines, was that visitors to a site should not have to think about any part of the experience (Krug, 2000). This means that Web pages should be self-evident, obvious, and self-explanatory. He cited three specifics about user behavior in order to support these principles:

1. We don't read pages. We scan them looking for words or phrases that catch our eye (some exceptions apply);
2. We don't make optimal choices; we "make do." We don't choose the best option; we choose the first reasonable option; and
3. We don't figure out how things work; we muddle through.

see appendix b:

More detailed listings of Web Usability Guidelines.

Krug developed a set of general principles to be used in designing every element on a Web site, from the general (entire site pages) to the more specific (pull-down menus, roll-overs, forms, etc.). He believed that these principles can be applied to every Web site, every time.

In order to design Web pages with scanning rather than reading in mind, he suggested the following:

- create a clear visual hierarchy on each page;
- take advantage of conventions;
- break pages up into clearly defined areas;
- make clickable areas obvious; and
- minimize visual noise.

I believe that, beyond the common-sense basics of graphic design adapted for the Web, the rest of the guidelines that come from Nielsen and Krug cannot be generalized to all users, all the time. I think that methods for achieving usability – such as field studies, heuristic evaluations, design sessions, design and usability tests, explorative design tests, and benchmark assessment or post-release product tests – are more successful than step-by-step principles.

Internet technology

Rapid developments in computer and communication technology over the last eight years have meant that Internet technology has become increasingly complex. The Web is now populated not just by Web sites, but by Web portals, Web services, Web channels, and Web applications. Users can communicate on the Web through a

wide range of synchronous and asynchronous communication services. User Internet behavior has also become increasingly complex. Users can learn, shop, streamline daily tasks, meet others, manage their business, and have fun without ever leaving the comfort, privacy, and convenience of their home. Innovations in personalization allow users to customize what they see on a Web site and how they see it. The goal of the following three sections is to organize and understand these innovations, and their implications on the particular user group of this design research project.

Web site types

Over the last eight years, Web sites have developed into five, progressively more complex types: Web site, Web portal, Web service, Web channel (Goldstein, 2000), and Web application. The definitions listed below relate to health care examples. However, not all Web portals are health Web portals. Each type occurs in a broad range of content areas:

see appendix c:

Larger images of these and other Web site types I examined.



Figure 4 Web site
www.iwkgrace.ns.ca

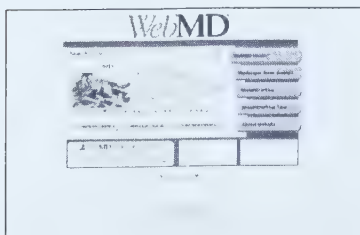


Figure 5 Web portal
www.webmd.com

- *Web site* – a basic Web site presents different types of content to the user. Typical electronic commerce (e-commerce) sites are often referred to as “brochureware” because they provide the visitor with basic information about the company or organization. In the case of a hospital, for example, the Web site may include: a picture of the hospital, a list of the services provided there, a list of the practitioners and their hours of availability, contact information, and driving directions. The main focus of such sites is marketing. One example of a basic medical Web site is the *IWK Health Centre* site (<http://www.iwkgrace.ns.ca>);
- *Web portal* – a Web portal is a highly promoted health Web brand. The purpose of a health portal is to deliver a large amount of information on a variety of health-related topics and to sell products through advertising. One popular health Web portal is *WebMD* (<http://www.webmd.com>). Aside from providing news and information on its own site, *WebMD* also provides medical content to other Web sites and portals, such as *MSN Health*. Typically, Web portals are much larger, and contain much more content, than Web sites. Their content tends to be updated more often (sometimes several times per day), and may or may not originate from the same content source;

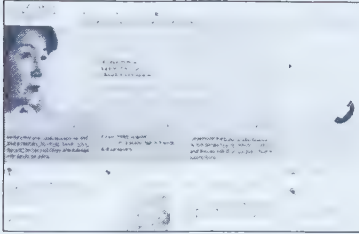


Figure 6 Web service
www.yme.org

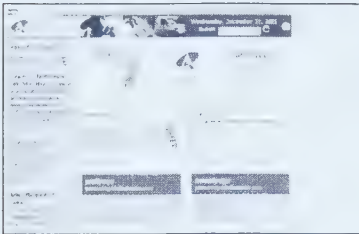


Figure 7 Web channel
www.allina.com/ahs/

- *Web service* – a Web service typically offers more advanced interactivity for its users than a Web site or a Web portal. It also offers compelling reasons to return on a regular basis: e-communities, online support groups, shopping, and other services. The goal of a Web service is to move beyond providing information, to facilitating quick access to care resources through online technology. *Y-ME National Breast Cancer Organization* Web service (<http://www.yme.org>) aims to provide women with information and access to a wide range of breast-cancer-based online support services;
- *Web channel* – a Web channel usually offers interactive applications that allow users to complete tasks. Some examples of popular Web channels in the financial service industry are *e*Trade* (<http://www.etrade.com>) and *Quicken* (<http://www.quicken.com>). One example of a health Web channel is *Medinformation.com* (a Community Service of Allina Hospitals and Clinics) that serves communities around Minnesota and in western Wisconsin (<http://www.allina.com/ahs/>). This site provides its visitors with a wide range of health-related content, news, shopping, and resources with local connections. For example, a visitor to the site can look for a doctor based on specialty, name, location, gender, and languages spoken.

The premise behind an online medical channel is that health care is service-based, not simply information-based. While a typical Web site relies on quality content to satisfy its visitors, a Web channel focuses on service and function. A medical Web channel may offer information and services that fall within the realm of education, triage, diagnosis, and treatment. It integrates information and entertainment to deliver a combination of information, decision support, product sales, and access to professional services within a community (Goldstein, 2000); and

- *Web application* – a Web application is a software program based on the Web. This term often refers to a Web site, part of which is stored on the user's computer; or an application, part of which regularly accesses the Web. The typical reason for an application to connect to the Web is to update and download additional content, and to connect with other users. A Web application can be very similar in purpose and type of functionality to a Web channel. *My Health and Hope* is one example of a Web application.

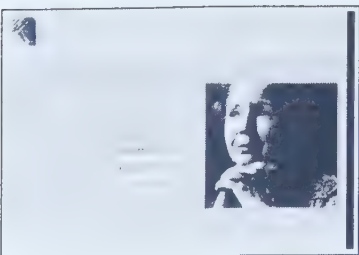


Figure 8 Web application prototype
www.myhealthandhope.org

Communication tools

The Internet offers several tools for communication and interaction, both synchronous and asynchronous. Three of these have been used by cancer patients and survivors most often: Internet Discussion Groups, Web Forums, and Chat Rooms. Below is a description of each tool, with a specific focus on its use by cancer patients:

- *Internet Discussion Groups (listserv)* – a listserv is by far the most extensively developed and popular form of Internet group communication. It is a subscription service to an ongoing, online discussion relating to a specific topic. With regards to cancer, listservs have been used to discuss cancer types, stages, and treatments. Users subscribe by sending an email to a central computer or by completing a subscription form on a Web site. Members are then given an email address by which they can send messages to all other members. When a message is sent to that email address, all members of the listserv receive it. Cancer-related listservs can be operated by any individual or organization. However, most cancer listservs for survivors and family members are supported by the *Association for Cancer Online Resources* (ACOR) (<http://www.acor.org>). ACOR sponsors seventy-nine cancer groups, with a specialization in rare cancers. Listservs are a particularly powerful communication tool for people with rare cancers or uncommon cancers. Since these individuals may be geographically dispersed, the listserv provides the opportunity for them to connect with each other and discuss their shared experience (Sharp, 2000);
- *Web Forum* – a Web forum is similar to the listserv in that members post messages, within a common interest area, to be read by other members. In a Web forum, however, these messages are posted using a Web site, and they are often categorized by a topic or “thread.” A thread is an ongoing discussion on a specific topic.

Web forums can be sponsored by cancer centers, disease-specific survivor groups, or Web portals. Some of these Web sites offer their members the opportunity to create memorials to those who have succumbed to cancer, as well as to post personal stories. The potential benefits of these tools are currently under investigation; however, current research suggests that individuals writing these stories receive a therapeutic value and validation from those who read them, while those who read also receive support through the commonality between their own and others’ experiences (Sharp, 2000); and

- *Chat Rooms* – unlike the tools described above, chat rooms happen in “real time”: they offer the opportunity for several people to discuss a topic at the same time. Some “chats” are scheduled on a specific topic and at a specific time, in order to maximize the number of participants. Some, however, are on-going; a person can log in at any time, check if anyone else is in the room, and start a conversation. Chats may be sponsored or led by an expert, a health care provider, or a member of an organization. At times, a physician or health care professional may schedule a regular chat time to discuss concerns and answer questions.

Advantages and disadvantages of Internet communication tools

Internet communication tools, while not capable of replacing face-to-face support, offer a number of unique advantages (Sharp, 2000). The Internet offers a level of anonymity that is nearly impossible to match in a face-to-face support situation. This anonymity allows for the discussion of difficult topics, personal feelings and stressful events in a manner that may be more comfortable for some individuals. Similar to in-person support groups, online equivalents provide a sense of commonality in facing cancer. For individuals in more geographically remote areas, such as small Northern Alberta communities, or the North West Territories (North West Territories Breast Cancer Working Group, 1997), or in cases where only a very small percentage of individuals are diagnosed with a particular cancer, online support may be the only kind of support available. Online communication tools also offer the opportunity for individuals at different stages of the illness to meet one another. For example, cancer survivors have the opportunity to offer support to those who are newly diagnosed (Sharp, 2000).

Medical information is expanding and changing at a very rapid rate, with more than 360,000 articles published in medical journals every year (Detmer & Shortliffe, 1997). This extremely rapid knowledge growth makes it difficult for practitioners to stay current with medical advances. One study found that, two years after wide publication, fewer than 50% of general practitioners knew that laser surgery could save the sight of some of their diabetic patients (Detmer & Shortliffe, 1997). Better access to current information and better organization of resources can help practitioners become aware of new information. Further, patients who can research medical topics online may bring new knowledge to the practitioners’ attention (Sharp, 2000). As a result, the practitioner may be better prepared, in the future, to answer his or her patients’ enquiries. Email has the additional benefit of allowing the practitioner and the patient to keep in more regular contact, to share articles and resources, and to respond to treatment questions.

According to Detmer and Shortliffe (1997), one of the major concerns in the use of Internet communication tools for the discussion of health-related topics has been the accuracy and reliability of the information provided. This concern is common to the entire Internet. Online communities have adopted a number of strategies to deal with this issue: expert moderators, rules of conduct, and visitor education. Many Internet communities develop their own rules of conduct and enforce them. This kind of system is only possible if health professionals become involved in online communities and monitor Internet communications for misconduct, solicitation or unsupported information. As in face-to-face support groups, participants may encounter unsupportive interactions or even confrontations. In groups without a moderator who can monitor and enforce respectful conduct, this danger is more common and has the potential to be more damaging. Moderators can ask individuals to supply sources or data for the information that they are providing, unless that information comes from direct personal experience.

However, cancer patients still need to be made aware that the information they receive online may be based solely on personal experience and may, therefore, not be applicable to their situation (Sharp, 2000). Patients are encouraged to use trusted sources like the American and Canadian Cancer Societies, National Cancer Institute, and American Society of Clinical Oncology to check all information found elsewhere.

Meeting the design needs of online community users

As online support grows in popularity, designers are becoming more conscious of the needs of individuals engaged in online communities. Many designs now include basic tailoring facilities and “emoticons.” Users themselves are beginning to demand better usability, including such features as advanced search and categorization and archiving. Users also need quality resources on the Web, thematically linked to the bulletin board messages. For example, a user may find it helpful to be able to click on a term discussed in a message, and call up relevant information in a secondary Web browser. Users may also want to tailor the bulletin board display and to store personal files for future access (Preece, 1998).

Personalization software

Personalization software was originally developed from a business perspective, with customer retention in mind. Retailers, such as *Amazon.com*, hoped that by analyzing each customer’s individual needs, they could then more accurately target content and products to that customer. By using personalization software, designers can offer users content that has been specifically tailored to their needs and goals. Web sites such as *Slashdot.org* provide users with the opportunity to select the topics that interest them most.

Look-and-feel – a term most often used to describe the visual design of a digital interface: colors, type, grid, images, etc.

Similarly, personalization software is useful when delivering content to mobile devices, such as Personal Digital Assistants (PDAs), cellular phones, and laptops, where pages must be tailored to varying screen sizes, and color and interface capabilities. Personalization can also let customers change the way a Web site or Web application looks or functions. Portal sites such as *Excite.com*, offer increased flexibility, allowing users to modify the color of the site and to select an image theme.

The most basic and fundamental concept of personalization is that each user can be uniquely identifiable (McAllister, 2001). This function allows for collection and storage of specific data about each user – a user’s profile – which might contain any number of information pieces, ranging from the user’s name, to the last five items he or she purchased, to the time of day the user most often accesses the site.

A Web site or Web application using personalization software is able to automatically display content that the user has previously selected, or that has been intuited from information that the user has provided about him or herself. For example, the personalization software can display a “Happy Birthday” message on the day of the user’s birthday.

More advanced personalization engines develop user profiles based on information intuited from customer behavior on the site (McAllister, 2001). This lets a Web site adapt to users whose patterns of use have not been foreseen by the designer.

Personalization software can also keep a record of all the Web pages a user has previously visited (McAllister, 2001). Over time, the personalization software is able to recommend other content based on the user’s past online behavior. A customer who searched for a dietary guide for women with breast cancer and who purchased the *Breast Cancer Survival Manual* from *Amazon.com*, for example, might receive recommendations for other products coded with the keywords “breast cancer.”

Users can also generate personalized content for other users. Employing a form of mathematical analysis known as an approximate nearest neighbor search, a given user’s profile is compared to those of others who may have performed similar actions (McAllister, 2001). For example, if Anna has bought some of the same products as Shyla, then Anna’s purchasing history might yield other products worth Shyla’s attention.

Users can also rank given products or content based on their own preferences. Over time, statistical analysis can identify users whose preferences run along similar lines.

These rankings can be displayed to help users make more informed purchasing choices, or when targeting products or content to similar users (McAllister, 2001).

User satisfaction is the ultimate aim of personalization. It is motivated by the recognition that a user has needs, and that meeting them successfully is likely to lead to a satisfying relationship and re-use of the services offered (Personalization Consortium, 2003).

Historically, one source of pleasure for people, according to Jordan (2000), has been to surround themselves with functional and decorative artifacts: preferred objects that we choose to have in our environment. Prior to personalization software, users on the Web were unable to exploit this source of pleasure. The content, structure, and look-and-feel of a Web site was chosen by a designer, for the user. The only choice that a user had was whether to use one Web site or another. Personalization software allows users to customize their online surroundings as they would their physical surroundings. People (under most circumstances) can paint the walls of their homes – they can also choose the colors of a Web page. They can place a bookshelf in the living room, and populate it with their favorite titles – they can also have a place on their Web site where they store their favorite content. In a cave-dweller's day, most objects of pleasure would have been crudely fashioned out of stone. Since the 1900s, most have been created by industry. Today, some exist only in the world of 1s and 0s. Users still take advantage of designers' expertise at the macro-level (how the Web site is designed, both prior to and after a user selects personalized content), and at the micro-level (how specific Web content is written and presented in order to be readable on the screen) (Nielsen, 2000). These are just a few of the ways that designers will continue to “design” Web sites. However, they will now design them as sites that can change to better suit the needs of the user group.

Internet-use behavior

Ilise Benun (2003) suggested that individuals' behavior while online fits into one or more of six possible categories, each with a particular set of goals and desires:

1. *Learner* – want to be educated on a specific topic or a general category of interest; want to spend their time productively and efficiently while online; want to find credible research-oriented sites;
2. *Shopper* – want to acquire all the information they need before making a decision to purchase a product; want to complete transactions in a safe and simple environment;

3. *Transactor* – want to streamline daily tasks like banking by using online services; want to monitor and maintain personal and professional data;
4. *Connection seeker* – want to meet people of varied backgrounds and cultures; want to exchange ideas on topics of mutual interest; want to establish meaningful, interactive relationships;
5. *Business browser* – want to dispense or gather information in a concise manner; want to manage the needs of various people within an organization through online services; and
6. *Fun seeker* – want to spend their leisure time exploring quality entertainment; want to investigate new technologies and online features.

Three of these Internet-use behavior types and their needs – Learner, Connection seeker, and Transactor – are relevant when discussing Internet-use behavior of cancer patients.

Internet-use behavior: The learner

Conducting health and medical research on the Internet is no longer solely the occupation of scientists and health care professionals. The Internet provides access to health and medical information to millions of patients worldwide (Ehrenberger, 2001). A pilot study, conducted by Ehrenberger (2001) at the University of Tennessee on patients in the information age, found that more than one third of respondents used the Internet to seek information on cancer clinical trials. Ehrenberger also found that cancer was the second leading disease for which information was sought online. Of the 42 participants in her study:

- 16 respondents (38%) indicated that they used the Internet to seek trial-related information;
- 13 (31%) reported seeking general disease-related information; and
- 5 (12%) sought psychosocial support.

Thirty-eight percent of the study participants stated that the information they found on the Internet increased their understanding of the situation and their ability to talk with their health care providers, while 24% noted that the information they found on the Internet helped them to ask more informed questions of their doctor.

Ehrenberger's recommendations, which emerged from the study, were that health care providers must increasingly acknowledge, understand, and support their patients' desire for electronic communication and information seeking (Ehrenberger, 2001).

Internet-use behavior: The transactor

This particular Internet-use behavior has, to date, undergone the least study in the health care area. However, I feel that the tasks associated with this behavior are as relevant to cancer patients as information and connection seeking. Increasingly, users have begun using the Web as a way to manage and systematize daily tasks (Benun, 2003). These users manage their finances, shop, and relax online because it is more convenient and efficient than leaving home or work and doing so in person (Benun, 2003). Managing these tasks online carries with it a number of advantages for women with breast cancer. Just as with information and emotional support seeking, there are times when leaving your home in order to pay your bills or buy a gift is inconvenient or even impossible. A woman who has recently undergone treatment for breast cancer, for example, may be physically unable to leave her home, or may feel uncomfortable doing so. She is still mentally capable of managing her life. Online banking, shopping, etc. allow her the freedom to complete tasks with less effort, in the comfort of her home, any time of day or night (Benun, 2003).

Internet-use behavior: The connection seeker

The majority of Ehrenberger's study participants identified the Internet as an important factor in gaining increased emotional wellbeing. Forty-eight percent of respondents reported that finding factual information on the Internet, such as mortality rates, staging information, treatment options, and details about treatments, facilitated their ability to cope with their disease. Twenty-one percent of the respondents identified the importance of finding hope through online communication with other patients, while another nineteen percent identified the importance of finding out that they were not alone. One participant spoke of the Internet as giving her the ability "to ask ... what others felt about [her] feelings." Another participant spoke of an increase in hope: "That there is lots of research being done to find a cure ... It gives me the hope and courage that I need." Yet another participant spoke of the importance of not feeling alone: "That no matter the type of cancer, I am not alone. Everyone suffers the same or similar struggles as my own" (Ehrenberger, 2001).

Internet support groups have become increasingly popular with people facing all types of illnesses because individuals do not have to leave their homes in order to receive information and emotional support (Smith, 1998). The *Association of Cancer Online Resources Inc.* Web site (<http://www.acor.org>), for example, serves as a gateway to 131 cancer support group listservs, and is used by more than 36,194 members (Association of Cancer Online Resources Inc., 2003).

Internet-use: Two case studies

In the last few years, a number of studies have explored new opportunities for using Internet technology and tools to provide information and support for cancer patients. Two such case studies are outlined below: *Mobile Applications for Patients Education* (Wood et. al., 2003) and *HutchWorld* (Farnham et. al., 2002).

Case study 1: Mobile Applications for Patient Education

The main goal of the International Centre for Digital Content (ICDC) is to explore the relationship between technology and society through present and emerging applications. In September 2002, they partnered with Health Care Services in Liverpool, UK, for a project to provide the Primary Care Group (PCG) health care specialists with a collection of digital devices that could provide breast cancer patients with personalized educational information at any point during the course of their treatment. The first phase of this project focused on the development of a Personal Digital Assistant (PDA) prototype that gave patients access to educational multimedia content relating to their condition. The PCG health care specialists and the International Centre for Digital Content team hoped that the personalized content provided on the PDA could empower cancer patients to make informed choices about their treatment (Wood et. al., 2003).

Personal Digital Assistant (PDA) – a lightweight, hand-held, usually pen-based computer, most often used as a personal organizer, but more recently used for communication, research, shopping, and other purposes.

The ICDC group has worked closely with breast cancer patients and the PCG, gaining their response to prototypes, and asking them about the use of PDAs to access information, and the type of information that they would require. The team used patient scenarios to gain a better understanding of the sequence of events at each stage of treatment.

The ICDC group developed a set of recommendation for the design of a hand-held device for breast cancer patients. This device would need to have the following (Wood et al., 2003):

- information that covered key subjects that arise during the patients' treatment;
- resources that lowered stress levels and aided recovery;
- control over content;
- a way to share information and resources with family and friends;
- easy access to other resources and support networks;
- voice recording, annotation, and reminder functions to aid retention and recall; and

- access for users who are socially disadvantaged, visually impaired, or who have low literacy levels.

Even though these recommendations seemed reasonable to include in the design of *My Health and Hope*, and fell in line with other research, I was left with a number of questions that needed answers:

- Would the women with breast cancer that I interviewed feel the same way as those who were interviewed by the ICDC group?
- Would they have other suggestions?
- How likely were they to use a PDA?

In order to get these questions answered, I incorporated them into the focus groups and survey.

Case study 2: HutchWorld

Beginning in 1997, researchers and designers at Microsoft Research and the Fred Hutchinson Cancer Research Center developed *HutchWorld* – an online community environment (Farnham et. al., 2002). *HutchWorld* was a computer-mediated social and informational support system, aimed at addressing the needs of bone marrow transplant patients and their caregivers. The goal of this study was to test whether access to computer-mediated social and informational support could have a meaningful impact on the well-being of cancer patients and their caregivers. Eighty-four people participated in the six-month study: thirty-five patients and forty-nine caregivers (twenty-five in the control condition and twenty-one in the intervention condition – randomly assigned.) All study participants were over 18 years of age, and lived up to one month in an outpatient housing facility.

HutchWorld was designed to be a private, multi-user community environment that integrated the following:

- *social interaction tools*: both synchronous and asynchronous communication through a 3-dimensional (3-D) chat room, a personal messaging system, and email, as well as Web page creation tools, virtual gifts, and notes;
- *information tools*: access to information on the Web and through *HutchWorld*; and
- *diversionary activities*: Web browsing, playing online games, and making music.

The results of the study were as follows:

- *HutchWorld* participants used the Internet more than the control condition;
- the primary use of computers was to interact with family and friends;
- other reasons for use were passing the time, seeking out information, and seeking out other forms of social interaction (this was more common in the intervention condition);
- people used their computers to interact with family and friends to a much greater extent than to interact with others;
- the existence of *HutchWorld* did increase the likelihood that users would interact with others who were living in the facility and using *HutchWorld*; and
- the most common uses were navigation in *HutchWorld*, chatting, posting bulletin board messages, sending gifts and notes, seeking information about others, and managing personal identities.

The intervention of *HutchWorld* into the patients' lives had an impact on self-reported life satisfaction and social support. Interaction with *HutchWorld* buffered patients against reductions in life satisfaction due to an increase in availability of social support from family and friends, and from health care professionals (Farnham et al., 2002).

User group

Internet use by women

The number of women using the Internet has grown significantly since 1995. By 1998, 42% of Internet users were female – up from 20% in 1995 (Goldstein, 2000). According to NetSmart Research, in 1998, the average North American female Internet user had the following characteristics (qtd in Goldstein, 2000):

- she was 41 years old;
- she had a household income of \$63,000;
- she spent an average of six hours online per week;
- 64% of women who used the Internet worked full time; and
- 54% of women who used the Internet were moms.

An October 1998 survey of 1,026 adults, conducted for Clinique by Bruskin/Goldring Research, found the following results about women's purchasing behavior (qtd in Goldstein, 2000):

- women purchased at the same rate as men;
- women bought more; and
- women spent more.

This study also suggested that women wanted convenience when shopping online and that they enjoyed having the opportunity to shop anytime, day or night. The study also found that its female participants felt that building relationships was an important factor in a satisfying online shopping experience. Female study participants tended to like customizing information for their own needs, and enjoyed being remembered when they returned to the site. They also appreciated having the opportunity to share ideas and hear opinions from other women (Goldstein, 2000).

Women also tend to look for health information online. Health care is one of most frequent research topics for women online. This popularity is mostly due to the anonymity and autonomy the Web offers to those searching for information on such sensitive topics as a low sex drive, eating disorders, or a lump in the breast, to name a few examples. The Web empowers women to seek answers to their health questions and concerns on their own, in the privacy of their own homes. Two popular health sites, *allHealth* and *Mayo Health Oasis*, count 688,000 and 433,000 unique visitors every month, respectively. Both sites focus on providing practical, printable information that is specific to women's health needs. *allHealth*, which is part of *iVillage*, contains information on subjects as diverse as Alzheimer's, pets, relationships, and working from home. *iVillage* also encourages its visitors to converse on a variety of topics: feminism and how to motivate yourself to exercise are just two examples. Women post their thoughts on the Web site and other women respond with their own observations and experiences, thus creating an online community. The *Mayo Clinic's Health Oasis* provides health information through headline news, articles written by Mayo providers, and pop quizzes. One quiz, for example, helps moms determine whether or not their child has serious bowel trouble. Launched in 1998, *Dr. Koop Online*, and specifically *Dr. Koop's Women's Health Resource* page (<http://www.drkoop.com/womens>) goes beyond offering women's health content. In addition to health information, this Web service offers more than ninety online support groups; has regular chat sessions on topics such as menopause and prenatal care; and provides users with interactive learning modules, such as the *Allergy Learning Lab*. Users can create a "My Health" personal page by providing health and lifestyle information about themselves.

Note: Information regarding breast cancer comes from the Canadian Breast Cancer Society Web site (<http://www.bccsc.ca>).

Breast cancer

Breast cancer can occur in both women and men, although 99% of all breast cancers occur in women. Over the last twenty years, patients diagnosed with breast cancer have increasingly received very good prognoses.

Certain risk factors may increase a woman's chance of developing breast cancer. However, there is no single cause. Factors that appear to increase the risk of developing breast cancer include:

- being female;
- growing older;
- family history of breast cancer in a close relative (mother, sister, daughter);
- genetic mutations in the BRCA1 or BRCA2 genes, or in genes that affect cell growth;
- previous breast cancer; and
- atypical hyperplasia or lobular carcinoma in-situ.

Screening tests can detect some breast cancers early and, with early treatment, improve chances of recovery. Signs and symptoms of breast cancer may include changes in the breast size, shape, skin or nipple. These signs are often first discovered by the woman, during her monthly self-exam. This is usually followed by diagnostic tests such as special mammograms, ultrasounds, or a biopsy. If needed, additional x-rays, ultrasounds and scans may be done to determine the extent (stage) of the cancer.

Pathology tests are then conducted to determine characteristics of the tumor, such as:

- the type of cell in which the cancer started;
- the area of the breast in which the cancer developed;
- the stage of the cancer;
- the aggressiveness (grade) of the cancer;
- whether the tumor is encapsulated (in-situ) or invasive; and
- the tumor's sensitivity to the hormones estrogen and progesterone.

These characteristics help the doctor determine the best approach to treatment. Treatment plans will vary with each individual situation, as no two women with breast cancer are the same, nor are their cancers identical. Treatment may include one or more of the following treatments:

- surgery;

- radiation therapy;
- chemotherapy;
- hormonal therapy; and
- biological therapy.

Research is ongoing in the attempt to find a cure for breast cancer, or a way to prevent it. A person with breast cancer may be asked to take part in research studies (clinical trials) to test new treatments, new approaches to reducing risk, or new ways to detect breast cancer. While the ultimate goal of research is to totally eliminate breast cancer, its aim and success in the short term has been to improve the quality of life and outlook for those living with this disease.

Treatment

Each case of breast cancer is unique. Each woman's experience with breast cancer is unique. Treatments for breast cancer, as well, may be completely different from one woman to the next. Which type of treatment will be chosen depends on the characteristics of the breast cancer and the woman's individual life situation. Open communication with the woman's doctor is very important as it allows her to fully participate in treatment choices. This also ensures that her treatment plan is adjusted to her requirements and preferences.

Treatment decisions are based on:

- stage of the cancer;
- grade of the cancer;
- how the cancer cells appear under a microscope in comparison to normal cells;
- whether the tumor is encapsulated (in-situ), or has broken through its confines and is spreading to surrounding tissues (invasive);
- the size of the tumor;
- hormone receptor status of the cancer cells;
- individual's age;
- individual's general health;
- menopausal status; and
- the woman's personal situation.

Surgery is the standard treatment for almost all cases of breast cancer, with lumpectomy and total mastectomy as the two most common surgical techniques. The woman may be given additional therapy (radiation therapy, chemotherapy, hormonal

therapy, or biological therapy) after the surgery, to destroy, or at least control, any cancer cells that may have escaped from the primary tumor. Other types of therapy are also performed before surgery to shrink the tumor and make it easier to remove.

Rehabilitation and adjustment

Rehabilitation is a very important part of breast cancer treatment, helping women return to their normal activities of daily living. The recovery process is different for each woman, and depends on the extent of her disease, the type of treatment she has received, and other factors. Rehabilitation may be a long process.

In most cases, rehabilitation activities will include:

- *Rest* – Some women find they tire easily after surgery or breast cancer treatments;
- *Comfort* – Some tenderness and swelling occurs after breast surgery. Specific steps may be taken to help alleviate various discomforts;
- *Body image* – After the surgical removal of a breast (mastectomy), some women chose to wear a breast form (prosthesis) to recreate the appearance of a breast. Other women choose to have surgery to reconstruct the breast and restore its natural shape; and
- *Exercise* – Exercising the arm and shoulder after surgery has a number of significant benefits, including improved muscle tone and joint mobility, and reduced pain and stiffness.

After the completion of treatment(s), after the recovery process, and when the doctor gives the go-ahead, the woman may return back to her normal life activities. Most women are able to return to work and to their normal routines of daily living after treatment for breast cancer.

Emotional impact of a cancer diagnosis

Among women, since 1974, there has been a twenty percent decline in mortality rates (Canadian Cancer Society, 2003). Because of the increasing number of patients surviving well beyond the initial diagnosis, researchers are beginning to focus on identifying factors that can affect how the patient copes with and adapts to his or her disease. Once again, social support has been identified as a key factor in increasing a patient's coping and adaptation skills. There are many different types of social support, from prayer and meditation to support groups and individual counseling. However,

as part of my research, I focused on the importance of support provided to women with breast cancer through their interactions with other individuals: family members, spiritual advisors, health care providers, or fellow cancer patients.

Effects of social support

Researchers have conducted both qualitative and quantitative studies into the effects of social support on women who have been diagnosed with breast cancer. Judging from qualitative responses, social support seems to have a number of benefits for women with breast cancer, particularly when it comes to their quality of life. Having a close network of social connections has been shown to help the psychosocial adjustment of breast cancer patients. In one recent study, women who were socially connected reported fewer limitations due to physical problems, as well as a less acute decline in the quantity and quality of their social interactions, than women who were isolated (Michael et al., 2001). In a study of 342 cancer patients, Hann et al. found that greater perceived adequacy of social support among cancer patients was associated with less depression. They found, among women with cancer, an inverse relationship between the number of family and friends and depression. Hann et al. also reported a number of additional observational studies which found that higher levels of social integration or social support were associated with better survival rates among women diagnosed with breast cancer (Hann et al., 2002).

Some breast cancer patients are unable to get the amount of social support they require. In some instances, this occurs because family and friends are uncertain about how to respond to the patient. Patients may also be concerned about placing a burden on loved ones if they ask them for psychological support. Because of these obstacles, some patients resist sharing their concerns with friends and family and look for other outlets, such as peer support groups (Weinberg & Schmale, 1996). Peer support groups have the potential to provide cancer patients, not only with emotional support, such as may be available from family and friends, but also with support specific to their particular condition. Support received in a group setting can provide information, guidance and emotional solace in ways that are specific to the woman's diagnosis, life situation, or treatment options. For example, a married woman with three children who has been newly diagnosed with breast cancer may need different type of support than a grandmother who is facing end-of-life.

Despite evidence of the effectiveness of support groups, many patients do not receive support group interventions. In one study (Weinberg & Schmale, 1996), only 10% of breast cancer patients attended cancer support groups. Most patients dropped out because the groups did not meet their specific needs. Weinberg and Schmale have

identified three types of barriers that may account for the under-use of support groups: practical, medical, and stylistic. Practical problems may involve difficulties attending meetings, such as lack of transportation, geographical isolation, or inconvenient meeting times. Medical factors focus on the impact of the illness itself, and may include lack of mobility and overall wellness. Stylistic barriers include patients' attitudes towards the support group, or inconsistency with the group's format or sponsoring agency. Some individuals may feel uncomfortable meeting face-to-face with others in order to discuss their needs and emotions.

Impact of computer-mediated support

The computer-mediated support group is an innovative alternative for women who have encountered one or more of the barriers to participating in face-to-face support groups. Patients may use email, Web sites, and live chats to connect with a variety of support communities, without encountering many of the practical, medical, and stylistic problems common to face-to-face groups.

An early study by Weinberg and Schmale, into the use of computer bulletin board support groups, found that the bulletin board offered the participants many of the therapeutic features of face-to-face groups, with the added advantages that these features were available to patients in the comfort and privacy of their own homes and at times of their choosing (Weinberg & Schmale, 1996). This study investigated a computer-mediated support group for six breast cancer patients. For a three-month period, patients used home computers to connect to a computer bulletin board on which they read messages from, and posted messages to, each other. Weinberg and Schmale discovered a number of advantages related to computer-mediated communication:

- it avoids many of the features that hinder participation in real-life support groups: distance, travel time, inconvenient meeting times, sickness preventing participation, etc.;
- participants remain anonymous;
- participants log on and read other participants' messages, and then post their own, at the times of their own choosing; and
- members can ask questions, share information, express concerns, and offer and receive advice and support.

The Weinberg and Schmale study had a short duration and a limited number of participants. It was also conducted at the very beginning of the existence of the Internet, utilizing now-expired technologies such as MS Kermit. Some technological

difficulties participants encountered when using the system would not be an issue if the study were conducted today.

In a 1998 study looking at online communities, Jenny Peerce conducted a content analysis of 500 archived messages from *Bob's ACL Bulletin Board* – an online support community discussing injury to the anterior cruciate ligament. Approximately 312 messages were posted by men, 156 by women, and 32 by users who could not be identified by gender. The messages were posted by 251 different people. The analysis showed that 76.8% of the posts were, to some extent, empathic. Some individuals directly asked for or offered support, while some simply told their story. Many asked or answered questions by drawing on their own personal experiences. The messages posted on *Bob's ACL Bulletin Board* illustrate the important role of empathy in an online community. People want to make contact with other individuals, tell them their stories, offer and receive support, and get factual information about their problems and concerns (Peerce, 1998).

Isolation: A case study

In May 1997, the North West Territories Cancer Working Group produced a summary report on breast cancer in the North West Territories from the point of view of the survivors. Sixteen breast cancer survivors, from the western Arctic and the Kitikmeot region, were interviewed in the latter part of 1996. The NWT Cancer Working Group compiled a series of recommendations based on the interviews. Four out of the nine recommendations address providing greater accessibility to information; one deals with access to social support (North West Territories Breast Cancer Working Group, 1997):

- Breast health information should be available in Aboriginal dialects and in plain language. Visual/audiovisual materials are also required;
- Information and support is essential for women with breast health/breast cancer concerns. The NWT Department of Health and Social Services should work with other concerned groups to ensure information and support is available at every stage of coping with possible or confirmed breast cancer – including pre-diagnosis, diagnosis, treatment and post-treatment. Opportunities for follow-up questions are important.

Important aspects of information and support include:

- access to a breast cancer survivor who is trained to provide information, encouragement and emotional support;
- counseling to assist breast cancer patients with financial

- arrangements, child care, employment matters and other concerns; and
 - discussion about prosthesis and reconstruction. A video on northern aftercare issues, including emotional and physical recovery, is needed.
-
- Opportunities for women to network with other breast cancer survivors should be supported;
 - The Canadian Cancer Society should monitor and make available data on NWT breast cancer information requests made to the Cancer Information Services toll-free lines, in order to assess NWT information needs on an ongoing basis; and
 - Accurate media reports about breast cancer should be promoted by breast health interest groups, by breast cancer survivors, by health professional groups and especially by the Government of the North West Territories.

Research methods

Understanding the user group

Understanding the user is essential when designing usable Web interfaces. User characteristics may include, but is not limited to, the user's typical age, gender, geographical location, relationship status, education level, income, and health status. Some of these statistics may be more important than others, depending on the nature, purpose, or content of the Web site. In addition, the designer must consider the user's motivation for visiting the Web site. Understanding the reasons users seek information on a particular Web site involves answering the following questions (Rowland, 2000):

- What does the user expect to happen at the site?
- What does the user want the outcome of using the site to be?
- What does the designer want the outcome of the user experience to be?
- How do users feel about the subject of the site?
- How does the designer want the users to feel after visiting the site?

Segmentation is an initial tool that can be employed to narrow the user group, understand it more thoroughly and, finally, keep the user group at the forefront of the design process. The last item in this list is especially important; the user group needs to remain at the core of every design decision within every phase of the project,

in an effort to navigate through any bias that designers may be bringing to the table. Bias occurs most often in Web site design relating to level of computer and Internet exposure and expertise. Web designers tend to have far more exposure to the medium, and may over-estimate the amount of familiarity that the average user possesses. Two methods that can place the user at the forefront of design decisions involve the creation of personae and scenarios. Personae are archetypes of typical, identified users of a design, with identities and personalities, as well as goals and needs. Scenarios are fictional narratives that place the interface within a context of use.

Personae

After defining the user group, the designer writes a story about a fictional person, complete with pictures, hobbies, quirks, product preferences, pet peeves, and details about the person's daily life. All team members use the persona at every subsequent phase of the project to check whether their decisions match the needs, goals, skills, and lifestyle of that individual. A number of Web design and development companies run focus groups or product market surveys to learn about potential users of their product, then summarize these into reports describing user goals, needs, and desires in terms of percentages and trends (Goto & Cotler, 2001). These summary reports create an abstract representation of people, lacking any details about individual customers. Designers often require details about users' motivations, frustrations, and desires when creating a product. This information helps the project team make important and strategic decisions on the design, functionality, and usability of the product. With the use of a persona, the designers' focus shifts away from arguments such as "I would never do that," towards a discussion about what the individual in the persona would do. Gomoll suggests including the following information in a persona (qtd in Goto & Cotler, 2001):

- basic demographics;
- day-in-the-life stories;
- photographs of people and their environments;
- likes and dislikes;
- observational data;
- product usage patterns;
- frustrations with similar products; and
- product-related desires.

Goodwin suggested that focusing on the unique goals and needs of specific individuals will aid in developing a product that satisfies the needs of many users (qtd in Benun, 2003). Goodwin suggested the following in creating a persona:

see appendix h:

3 personae with two
scenarios per persona.

- ensure that it represents behavior patterns, not job descriptions;
- create a small number of personae;
- include critical design information and personal details from the individual's life; and
- include three or four important goals for each persona.

There are a number of different ways to create personae (Benun, 2003). In some cases, personae are created without an existing basis in real life. In other cases, personae are synthesized from a series of ethnographic interviews with real people. In this project, I created three personae: Hannah Kaminska, Sandra Billington, and Mary-Anne White. Each persona drew upon three sources: the life of a real woman, comments made during the focus groups, and real-life stories of women who have survived breast cancer. I was then able to design three sections of the Web application, each one addressing the needs and life situation of one persona.

Scenarios

While a persona is a demographic that has been personalized with details, a scenario places that persona in a situation where he or she deals with the design. Scenarios are created by anticipating the motivations and the Web-application-specific situations of the user group, asking such questions as: what are the actual on- and offline circumstances specific to the user and his or her tasks, and why is this user interacting with this application? Each persona may be accompanied by two or three different scenarios. Creating the various scenarios takes the designer through several possible tasks, each leading the user down a different path in the site. Designers examine these paths to see whether they are too complicated for the user. If a path is too complicated, the user may abandon the task. In my project, each one of the personae is accompanied by two scenarios. The scenarios are based on that particular persona's life situation, goals, and needs.

Understanding users and their tasks

To navigate successfully towards the appropriate visual communication design strategy, designers have a set of tools that can aid them in gathering information on the user group's existing visual environment and communication needs. Both quantitative and qualitative analyses can be used during the research and analysis stages of the design process. Some of these methods can also be used after the implementation of the strategy, to provide guidance for its future adjustments.

Designing a Web application falls under the broader categories of Web site design and computer application/system design, as it is a combination of the two. Designing

this type of product comes with its own set of challenges, quite different from those encountered when designing a printed page or a physical space. Below is a brief overview of some research and design methods that aid designers in gathering information about the needs and goals of a user group, or in testing the usability of a computer application, Web site, or Web application.

Gould and Lewis (1985) conducted a study of the design and development of computer interfaces. It described three theoretical principles of system design which must be followed to produce an effective and easy-to-use computer system: 1) early and continual focus on users; 2) measurement of usage; and 3) iterative design whereby the system is modified, tested, modified again, tested again, etc.

1. *Early focus on users and their tasks* – Designers must understand who the users will be. This understanding is derived by directly studying how users think and behave; measuring their attitudes and physical characteristics; and studying the nature of the work expected to be accomplished. Gould and Lewis suggested bringing the design team into direct contact with potential users through interviews, discussions, and actual observations. Also, a more direct method can be employed: the users can try to teach designers to use the present iteration of the system. All of these methods should be employed prior to system design. Gould and Lewis stressed the importance of including typical users during this information-gathering phase, not experts.
2. *Empirical measurement* – Early in the development process, intended users should actually employ simulations and prototypes to carry out real work, and their performance and reactions should be observed, recorded, and analyzed. It is important to measure actual behavior: how the users learn and use the prototypes. These studies need to be conducted early in the development process.
3. *Iterative design* – When problems are found in user testing, they must be fixed. The process of testing and fixing must be repeated as often as necessary.

Although created for use in computer interface design, not Web interface design, the three principles developed by Gould and Lewis are still applicable, since most computer and Web applications are still difficult for most people to learn and use (Nielsen, 2000).

Usability testing

In practice, usability testing is often seen as a way to obtain objective data on the use of products. It has been a widespread belief that usability testing must be carried out by “neutral” usability specialists, that the users must think aloud in undisturbed solitude in the lab, and that experts should be kept at a distance. Three separate research teams, Karat (1997), Buur and Bagger (1999), and Borgholm and Halskov Madsen (1999), have come to see these concepts of usability testing as limited in scope. Traditional usability testing restricts understanding of problems and impedes productive dialogue between designers and users on use, context, and technology. These research teams recommended a closer involvement with user and tester during the design process.

Designing usable software involves more than user input; it requires the gathering of many astute perspectives to attain a balanced view. Karat described the need to consider a broader use of context when developing usable systems. He supported a wider view of usability: usability as not limited to the display and keyboard interface between human and machine, but encompassing how any artifact fits into a complex work or home environment. He believed that systems are not designed to merely replace human work, but to enhance human capabilities to do productive work (Karat, 1997).

In 1992, the International Organization for Standards (ISO 9241) developed software system design guidelines, including the following seven principles (Karat, 1997):

1. Sustainability for the task;
2. Self-descriptiveness;
3. Controllability;
4. Conformity with user expectations;
5. Error tolerance;
6. Suitability for individualization; and
7. Suitability for learning.

Buur and Bagger (1999) developed a five-step process for user-designer dialogue:

1. Moving the test facilitator into the lab;
2. Developing video documentation procedures;
3. Training research and development staff to act as co-organizers;
4. Turning test sessions into workshops; and
5. Involving users in design.

By replacing user testing with user dialogue, they hoped to achieve three important goals. First, dialogue tends to disclose user priorities and practices that may otherwise

remain concealed. Second, designers who are engaged in dialogue with the users tend to gain a deeper understanding of the problem. Third, engaging the users in dialogue sessions allows for brainstorming of new product possibilities (Buur & Bagger, 1999).

According to Borgholm and Halskov Madsen (1999), designers interested in incorporating usability testing into their design practice have a number of tools at their disposal:

- *Field study* – aims at exploring existing user practices. It is often conducted as a combination of interview and pure observation, and takes place at workplaces or private homes, depending on where the product or system is meant to be used;
- *Heuristic evaluation* – expert review of some early design proposals developed by other team members;
- *Design sessions* – potential users, designers, and developers are invited to participate in a session aimed at designing parts of the products, primarily by means of storyboarding and low-fidelity paper prototyping;
- *Design and usability tests* – take place in the lab and are considered to be the traditional usability activities. Users are brought into the labs where, by means of scenarios or use tasks, they work with a prototype and test specific features related to the design or functionality of the product;
- *Explorative design tests* – quick studies, which are early tests that take place in the lab by means of a prototype. In design tests, the overall design and conceptual principles are considered, whereas, in formal usability tests, specific features of the design or functionality are tested; and
- *Benchmark assessment or a post-release product test* – conducted in the lab or in the field once the product has been released. It also sometimes consists of a competitor evaluation.

When incorporating actual users into the lab situation, designers have the following methods at their disposal (Borgholm & Halskov Madsen, 1999):

- *Users as testers* – users conduct tasks on a prototype of the product, then answer questions or discuss issues related to the work on the prototype;
- *Users as designers* – design sessions are conducted in which users play an active role in shaping the future of the product; and

- *Users as the observed* – if the usability tests consist of field studies, users typically engage in their normal work tasks in their ordinary work environments. They are observed in order for the usability team to gain knowledge about typical situations in which the product will be used.

Krug (2000) suggested the use of focus groups and usability tests in ensuring a higher usability score for a Web site. A focus group can be used to gain a quick sampling of users' opinions and feelings about the Web site design. Focus groups consist of a small group of people, usually between five and eight, who sit around a table and react to ideas and designs that are shown to them. It is a group process, and much of its value comes from participants reacting to each other's opinions. In usability tests, one user at a time is shown the design and asked either to figure out what it is, or to try using it to do a typical task.

Krug's solution to any debates about the wants or needs of the user was to test and retest. He stated that the goal of a Web designer should be for each page to be self-evident, so that just by looking at it, the average user will know what it is and how to use it. He stated that users are nothing alike, and that Web use is basically idiosyncratic. For example, it is not productive to ask questions such as "Do most people like pull-down menus?" The more appropriate question to ask is "Does this pull-down, with these items and this wording in this context on this page, create a good experience for most people who are likely to use the site?" A careful analysis of the target audience and their needs and levels of Web experience has to occur before the start of the design process.

Guidelines for effective usability testing of Web sites

There is no single, correct way to conduct usability testing (Benun, 2003). The scope and depth of user testing is often constrained by the amount of time and money that a company or organization is willing to invest into a project. Since user testing often reveals important problems with the system and interface, the important thing is to make sure to do it. Some of the more simple tools that may be used as a first pass through the interface, in order to remove some of the more task-critical or pervasive problems before conducting more formal usability tests, include the following:

- *Cognitive walk-through* – specific tasks are broken down into essential cognitive components in an attempt to determine how usable the site will be for inexperienced users. This test is often a part of the development process;

- *Usability audit* – an existing site is examined, and improvements are suggested, based on accepted usability guidelines;
- *Focus group* – a group of people who have used the site or prototype is assembled. They are then questioned about their impressions of the prototype. A focus group can also be used to gain a clearer sense of the needs of the users before commencing the design phase; and
- *Log file analysis* – server log files are examined for clues about traffic patterns, popular entrance points and exit pages, and link visibility.

User as designer

Traditional forms of media design see and treat human beings primarily as consumers. Increasingly, however, the design of computer-based media is directed towards the invention of tools through which individuals can express themselves and engage in personally meaningful activities (Fischer, 2002). Through the design of personally meaningful activities, designers increase the possibility that individuals will be, and act as, designers when they desire to do so. These activities should be accessible to all interested individuals and groups, not just to a small group of early-adopters and technophiles.

During the first decade of Human Computer Interaction (HCI) research, little consideration was given to the following perspectives:

- the creation of co-adaptive environments, in which users have the ability to adapt designs to better suit their needs;
- the creation of intrinsically motivating computer environments in which users would feel in control, and could engage in activities that are interesting, challenging, rewarding, and matched to their needs and interests; and
- the design of media for collaborative design, in particular media that supports communities in creating, sharing, and managing knowledge (Fischer, 2002).

More recently, some members of the artificial intelligence (AI) community have begun to consider the true goal of AI as, not the replacement of human beings, but their empowerment and augmentation. Hence, the fundamental challenge presented by the new wave of computer media is not to deliver the same pre-digested information to all

individuals, but to provide opportunities and resources for social debate, discussion, and collaborative design (Fischer, 2002). This does not mean that individuals will always want to be engaged in this way. Nor does it mean that being a consumer or a designer is a binary (either/or) choice. Rather, there is a continuum ranging from passive consumer, to active consumer, to end-user, to user, to power user, to domain designer, to meta-designer (Fischer, 2002). The same person may want to be a passive consumer in one instance (when reading a news article, for example), and a designer in another instance (sharing favorite meal recipes, for example). The role of the designer should be to create computer systems that nurture, educate, and support individuals in assuming these roles.

EMPIRICAL RESEARCH

WEB SITE CRITIQUES

As part of the research process, I conducted a series of structured analyses of existing Web sites (often called Web site critiques) each with similar content amount, content area, or user group in relation to my design research topic. These analyses are a form of heuristic evaluation. Nielsen uses a form of heuristic evaluation to inspect the usability of a user interface. He states that this is the most popular of the usability inspection methods (Nielsen, 2004). It involves an examination of the interface with regards to its compliance with recognized usability principles – the heuristics (Nielsen, 2004). For this research project, I expanded on this model to include not only usability, but also the evaluation of the Web site's content, graphical appearance, and features.

Through each Web site critique, I gained insights into different aspects of my interface. Some critiques allowed me to examine current trends in Web navigation, organization of content, page design, and look and feel. Others gave me an insight into the type of breast cancer information that breast cancer organizations are providing to users on their sites.

Using Web site critiques as a research method was also based, in part, on my own professional experience of working as a Web site designer. Before engaging in creative design activities, designers often conduct research into how other designers have tackled design projects that have a similar user group, content area, or purpose (Goto & Cotler, 2001). They tend to analyze all or some of the following:

1. Designs in the same media, with a similar or same content area, purpose, and user group – often main competitors;
2. Designs in the same media, with a similar or same user group, but a different purpose and content area; and
3. Designs in other media, with a similar or same user group.

In case of a Web site design project, designers may analyze the following:

1. Web sites with a similar or same content area, purpose, and user group;
2. Web sites with a similar or same user group, but a different purpose and content area; and
3. Printed and electronic materials, such as magazines, newspapers,

advertisements, books, television shows, movies, products, video games, etc., with a similar or same user group.

What is a Web site critique?

A Web site critique is an analysis of a Web site according to a set of parameters that are based on information needs determined by the designer at the start of the project. Most often, these parameters will have to meet the requirements of the project, based on its goals and user group. These parameters are organized into a Web site critique template, through which the designer can maintain consistency and focus during the process of analysis. There are many possible variations to the visual, organizational, and informational requirements of such a template. The Web site critique template developed for this project, is one example.

What is it good for?

A Web site critique can serve three functions:

- initial analysis of the current iteration of a site before a re-design;
- analysis of the competition; and
- positioning tools within a particular genre.

A Web site critique allows one to describe outcomes of the design methods used in the past, then analyze their effectiveness in communicating with and serving the needs of the user group. This knowledge can then be applied to the design of a new Web site.

Template development

The Web site critique template that I developed emerged out of a series of questions that I had each time I browsed through a Web site. My main focus in designing this template was on how different design elements (navigation, content structure, typography, images, colors, etc.) functioned to support the site's purpose and user group. There were two types of questions I wanted answered:

- General questions relating to the site's purpose:
 1. What is the purpose of the site (from users' perspective);
 2. What are users' goals when visiting the site;
 3. How are these goals fulfilled/left unfulfilled;
 4. How does the site's navigation, content structure, typography, etc. support or hinder users and their goals;

see appendix c:

Web site critique template,
raw data, summary of data,
color charts, screen grabs,
and task analyses from the
Web site critiques.

5. What types of tasks can users perform on the site; and
 6. How appropriate and useful are these task tools?
- Specific questions relating to the site's design:
 1. Color palette;
 2. Typographic palette;
 3. Screen-size;
 4. Level of technical sophistication needed to use the site;
 5. Navigation system;
 6. Type of images used;
 7. Tone, and how is it achieved; and
 8. Type of language used?

Based on these questions, I developed a Web site critique template consisting of seven sections:

1. Administrative;
2. Type of site;
3. Content assessment;
4. Graphical assessment;
5. Functionality assessment;
6. Technical assessment; and
7. Personal reflections.

Screenshot – Web sites tend to be re-designed quite often. Creating an image of a page (or pages) in a site during any kind of analysis provides designers with a record for future reference. On a PC computer, press the PrintScreen key on the keyboard, then open an image editing application such as Adobe Photoshop, create a new document, and select Paste. One cannot navigate the interface – it is now a flat graphic that can be printed or saved. On a Mac computer, select Command + Control + Shift + 3. The file is saved in PICT format on the hard drive.

The unit of analysis for this study was the individual visual element, content item, or function. After collecting the individual observations, I then analyzed the data for patterns – similarities and differences. This is similar to the strategy used by researchers working in narrative analysis (Garson, 2004).

Administrative

The first section of the Web site critique template organized the task and its various components. This section is about creating screen-shots of the site, categorizing it according to a pre-determined system, and documenting the path to the site. Maintaining and structuring a record of the Web site, through screenshots, categories, and pathways, allows for future reference as well as comparison based on category or path to site. This data could be used in future research. The administrative section of the Web site critique consisted of the following sections:

- *Image keywords* – documents the screen-shots gathered from the site. Collecting screen-shots is especially important since most sites change on a regular basis, often with little or no warning;
- *Category* – the site may be categorized using many possible taxonomies. I used a categorization system based on the definition of task categories; and
- *Path* – the path that I took to locate the site.

Type of site

In this section of the Web site critique, I focused on assessing the site on the most general level, according to two criteria:

- *Target audience* – the primary target audience for the site. Here, I also noted any evidence supporting my conclusions; and
- *Purpose* – the primary purpose of the site. This could consist of providing entertainment, information, support, products, etc. A site could also have more than one purpose. The purpose could also be fairly broad or quite narrow. For example, the *Meals.com* Web site's purpose is to provide a variety of meal recipes.

This section of the Web site critique template was critical, since all subsequent sections referred back to these findings. Since I maintained that the target audience (or user group) was central to all visual communication design, then a visual communication design artifact could not be properly evaluated unless a user group could be determined. All site elements (graphics, content, navigation, functionality, etc.) were assessed according to how much they reflected the site's intended target audience and purpose.

Content assessment

This section analyzed the site's content, and how that content was organized, according to five criteria:

- *Structure* – the overall structure of the site at the level of its site map;
- *Hierarchy and organization* – organization of the site on the level of its navigation system (position, type, levels, and consistency);
- *Consistency* – the overall consistency of the site from section to section, and page to page. Consistency may be reflected in the treatment and location of the identity system, navigation, page structure, and content;

- *Clarity* – clarity may be reflected in how obvious it is for the users to locate themselves within the site, how easy it is to distinguish navigation elements from content elements, and how easy it is to distinguish the content area, purpose, and governing body of the site; and
- *Language* – the type of language used in the navigation, identity, and content of the site.

At this stage, I also made more detailed observations as to how much the site's intended target audience and purpose were congruent with its content and organization.

Graphical assessment

This section analyzed the site's graphical elements according to five criteria:

- *Look and feel* – the overall appearance of the site;
- *Imagery and graphics* – the specific treatment of images, illustrations, logos, icons, and other graphical elements;
- *Tone* – a general quality, effect, or atmosphere of the site;
- *Colors* – the principal colors used in the site design and their function. I also created a color chart for each site; and
- *Type* – the type, quality and purpose of the typeface(s) used in the navigation, identity, headings, and content elements.

At this stage, I also made more detailed observations as to how much the site's intended target audience and purpose were congruent with its graphical representation.

Functionality assessment

This section analyzed what the user could do on the site, apart from navigating through it and reading the content:

- *Tasks and actions* – I listed all the tasks and actions that the user could perform on the site.

Technical assessment

This section evaluated the site on a purely technical level, according to five criteria:

Download time – the amount of time that it takes for the site to load;

Resolution – the width and length of a typical Web page;

Color palette – number of colors used in the design of the site;

Plug-ins – requirements for Flash, Java, JavaScript, QuickTime, Windows MediaPlayer, Cookies, or other technologies; and

Restrictions – requirements for sign-ins, sign-ups, or log-ins.

Personal reflections

This section summarized and concluded my analysis, and provided a list of similar sites.

Choosing the sites

My choice of the six sites to critique was based on the following criteria:

1. *Level of complexity* – from initial brainstorming sessions, peer-consultations, and the literature review, I knew that, to be considered useful, *My Health and Hope* would have to contain many different kinds of information and opportunities for interaction with others. Therefore, I had to examine and evaluate Web sites that were comparable in level of complexity to the Web application that I was planning to design. They had to be at least on the level of a Web Portal in order to function as an informative learning model;
2. *Level of appropriateness for the target audience* – in order to be appropriate for analysis within this context, sites had to be aimed at a similar target audience, or have a similar audience as part of a larger audience category (they did not have to target women with breast cancer specifically, but women within a similar age group); and
3. *Level of subject matter* – a few sites that I wanted to examine were not only aimed at a similar target audience, but also contained similar subject matter to the Web application I was planning to design.

After considering the above criteria, I chose the following sites for analysis using the Web site critique template:

One Web portal:

1. *MSN.com* (<http://www.msn.com>)

Two non-breast-cancer-specific Web services:

1. *Royal Bank* (<http://www.royalbank.com>)
2. *Meals.com* (<http://www.meals.com>)

Three breast-cancer-specific Web services:

1. *The Susan Komen Breast Cancer Foundation* (<http://www.komen.org>)
2. *National Alliance of Breast Cancer Organizations*
(<http://www.nabco.org>)
3. *Y-ME National Breast Cancer Organization* (<http://www.y-me.org>)

Through the formal Web site critique process, I analyzed six sites. In total, during the course of this project, I looked at a total of twenty-three breast cancer sites and five health sites, plus numerous other portal and service Web sites.

Summary of findings

The Web site analyses allowed me to learn from the mistakes and successes of other designers. From Web site analyses, I developed a set of eleven guidelines for the design of *My Health and Hope*. Some of these guidelines were based on problems with usability that I wanted to avoid, and some were based on what I perceived as successes in the design. However, I do not suggest that any of these guidelines be taken at face value. They were meant as an initial starting point in the design process, and were used when developing the first prototype of *My Health and Hope*. These guidelines need to be tested with representative from the user group in order to determine the level of each guideline's usability and appropriateness. Also, below is only a brief summary of some of the observations – those that I felt were most critical for the initial design of *My Health and Hope* (please refer to Appendix C for all the full analysis).

Content assessment

Observations

All sites tended to suffer from too much disorganized content. In the breast cancer sites, two of the three had content that had clearly not been written with the Web medium in mind.

Some of the wording in the navigation was too long for easy scanning, or was vague and poorly explained.

Two of the three non-breast-cancer sites were very poorly organized. All of the breast cancer sites were handicapped by large amounts of content and excessive numbers of

navigation items. The information contained in the sites was easy to browse, but very hard to find.

In general, the sites did not convey a clear sense of hierarchy and organizational structure. Navigation would move, appear/disappear, and change formatting when moving from page to page.

Guidelines

Use content written and formatted for the Web – written content (copy, headings, and links) need to be formatted with the Web in mind. Most people scan rather than read Web sites (Krug, 2000). Because of this, written content on the Web must be shorter and more direct and descriptive than written content in print. All of the breast cancer Web sites that I analyzed contained too much written content that was not easy to scan because it did not contain descriptive headings and sub-headings, bulleted lists, and pull-quotes.

Language familiar to the users – most of the breast cancer Web sites used a mixture of informal language with a conversational tone and formal language with discipline-specific terminology. The terminology that is particular to medicine may not be familiar to most users. This lack of expertise needs to be taken into account when creating written content.

Consistent and clear navigation system – most of the analyzed Web sites were very poorly organized, containing large amounts of content and excessive numbers of navigation items. Clear and consistent navigation is a key factor in allowing users to access information quickly and easily (Nielsen, 2000).

Short, clear terms for the navigation – a number of the analyzed Web sites contained a mixture of terms or strings of terms that were, at times, quite long and technical and, at times, quite short and vague. In order to maintain consistency and allow for maximum comprehension, all navigation items should be formatted in a similar manner: they should be short and descriptive (Nielsen, 2000). In order to ease scanning, all navigation should contain no more than seven items (Nielsen, 2000).

Graphical assessment

Observations

The breast cancer Web sites had a definite visual style, characterized by a stereotypically feminine color palette and, in two out of the three sites, large photographs of women representative of the target audience. The photographs were portraits in greyscale or in a soft, warm duotone.

All the sites made primary use of a sans-serif typeface for navigation and, in most cases, for content as well.

Guidelines

Sans-serif type – the Web sites that used sans serif type were easier to read and scan than the Web sites that used serif type. This finding is also supported by Nielsen (Nielsen, 2000).

Warm, pastel-based color palette – many of the breast cancer Web sites used such a palette. A pastel-based color palette may enable to user to quickly and easily recognize *My Health and Hope* as a Web site for women.

Large portraits of women in the target age group – the large portraits acted as both decorative and informational elements. They added a sense of the human presence to the designs. They also quickly communicated that a particular site was for or about women. Fitted amongst information, navigation, and function, these photographs reminded me of the reason why the Web site existed: to be used by real people.

Functionality assessment

Observations

All sites contained some amount of task-oriented functionality. Some, such as the *Royal Bank* and *Meals.com* sites, were only of true benefit when used with these advanced features while, for others, that functionality was secondary to information access.

Guidelines

In order to potentially meet the information-seeking, service, and support needs of women with breast cancer, in ways that are faster, easier and more pleasurable, and based on the literature review and the focus groups, I determined that a high-level of functionality may be critical when designing *My Health and Hope*.

Technical assessment

Observations

All sites fit on an 800-pixel-wide screen, with vertical scrolling, and were fast to download. All but one used the 256-color palette, and plug-ins were only required by two sites (to view video). Half the sites required a sign-in process before permitting access to more advanced, personalized functionality.

Guidelines

800 x 600 pixel screen with vertical scrolling – all of the Web sites I analyzed used this particular dimension. Nielsen states that a 640 x 480 pixel dimension is best

(Nielsen, 2000); however, standards on the Web change quite quickly and, under these circumstances, it may be more appropriate to follow the precedent set by other, similar Web sites.

Fast download – the Web sites that were slow loading (on my high-speed Internet connection) were extremely frustrating, especially since, on most of them, I had to navigate through a number of pages to get to all the information I needed. *My Health and Hope* could be viewed on a telephone modem (which is slower) or a high-speed modem (which is faster). A user should never become frustrated by the Web site, since then the experience would no longer be faster, easier, or more pleasurable. Therefore, it may be most appropriate to optimize the site for the slower technology.

Minimal use of plug-ins with a clear benefit statement and alternatives – many users do not know how to install plug-ins on their computer, or they fear that doing so will crash their system (Nielsen, 2000). Some computers may be unable to install or slow to download plug-ins. Because of these reasons, all important content should be provided without the need of plug-ins.

Login for some advanced features with a clear rationale and benefit statement – some users are uncomfortable with providing personal information on the Web. According to the findings from my focus groups, users may be more likely to login to a Web site if offered a clear benefit and easy steps for doing so.

Task analysis of existing Web sites

After conducting in-depth analyses of these six sites, I realized that all of them contained, to some extent, task-based functionality. In an effort to find out how prevalent task-based functionality was on current Web site designs, as well as to gain a clearer view of the types of tasks that users of my interface might already be performing online, I conducted a preliminary task analysis of twenty-one large Web sites, in which task managing, as opposed to the presentation of content, was a primary component. Out of the twenty-one sites, all contained some form of task-based functionality. Some, such as the bank, shopping, library, university, health care, and breast cancer sites, contained a substantial amount of task-based functionality (26 task functions for one bank site alone).

I used this preliminary analysis when deciding on types of functions to discuss in my focus groups. From this analysis, I developed a preliminary taxonomy of tasks that I then applied to the design of personae and scenarios, and to my final prototype.

see appendix g:

Taxonomy of tasks chart.

USABILITY TESTS VIA SMALL GROUP INTERVIEWS

I tested the first iteration of *My Health and Hope* with a group of volunteer University of Alberta undergraduate Visual Communication Design (VCD) students, graduate VCD students, mentors, and faculty members, in order to remove any major usability problems before proceeding further.

see appendix f:

Summary of findings from all usability tests via small group interviews.

To the group of undergraduate VCD students, I showed four designs on a large-screen projector. The students were asked to give their general impressions of the page design, usability, and look-and-feel of the prototype (Prototype I). They were given a short introduction to the purpose, user group, and content area of my project, then were invited to participate in an unstructured conversation. All students agreed to participate. The instructor also offered comments.

see appendix i:

Prototype I.

To the group of graduate VCD students, mentors, and faculty members, I showed either paper or screen versions of the same prototype (Prototype I).

These conversations were useful in three respects: they forced me to start putting my initial ideas down on paper in ways that could be understood by others; they challenged me to explain my thoughts in both verbal and visual forms; and they allowed me access to useful feedback from students and colleagues. I incorporated most of their suggestions into the revised prototype (Prototype II). In creating the final prototype, I brought even more of these comments into account, re-thinking some of my initial assumptions about the user group, and the perceived clarity of my design.

see appendix j:

Prototype II.

Summary of findings

Comments from all conversations focused around three primary usability issues:

1. Problems with context;
2. Problems with clarity; and
3. Problems with hierarchy.

All of these problems relate to one another. Context problems, however, were the most fundamental. Most participants had a hard time understanding how the four designs related to one another. Some suggested the use of metaphor for the first page (the home page) for explaining the three areas of the site to its users. Context has also been the most fundamental issue in my project as a whole, and I feel that it was not resolved successfully until the final prototype (please see Section 4 for the full report).

Note: During the course of this project, I designed three prototypes. Each prototype consisted of a minimum of three designs. Each design consisted of one page from *My Health and Hope*.

Also, during the design of Prototype I and II, I was still designing a Web site. It wasn't until after conducting the focus groups that I realized I needed to design a Web application instead.

See Appendix "i" for Prototype 1, and Appendix "j" for Prototype 2.

Problems of clarity occurred in a number of areas. Global links (located across the top of every page) added an unnecessary fourth dimension to navigation, and a number of other links were unclear in purpose and function (mostly due to vague language.) Participants attributed lack of clarity as to the purpose of the site to a lack of clear branding. One participant suggested creating a clear parent brand for the entire site, with sub-ordinate brands for its various sections. Another participant felt that the design meant to represent a particular user's personalized page did not communicate a "my place" quality. He suggested making it look "used" in some way.

The graduate VCD class found the portraits of women in the first design very appealing. They stated that it was hard for them to get past the images and scan the rest of the page. They also suggested including similar images in the other three designs.

There were also serious problems with a lack of hierarchy. The ways in which different elements on the page related to one another, and the ways in which they varied in significance or importance, were far from clear. Two participants felt that creating designs of the sign-up and tutorial processes would be key in explaining the function of the entire site.

After collecting these comments, I addressed some of the usability issues in Prototype II. After that, I decided to postpone any further design decisions until after I had conducted and analyzed my focus groups, and created my personae.

FOCUS GROUPS AND SURVEY

After conducting a literature review and Web site critiques, I had a lot of background information, but I was still missing direct contribution from my user group. As per suggestions made by Gould and Lewis, before conducting further design, I wanted to gain direct contact with potential users through interviews, discussions, or actual observations (Gould & Lewis, 1985).

At this stage of the process, I was looking for guidelines to direct the course of my interface. Very generally, I wanted to know whether my user group used the Internet, what they used it for, and whether they used it to perform tasks. More specifically, I wanted to know if these users would be interested in building their own place on the Web, if they searched for breast cancer information and emotional support online, and what, if anything, they found missing from these experiences of these tasks.

see appendix e – f:

Ethics application and all accompanying documentation; focus group transcripts and analysis; and survey and analysis.

I felt that a mix of qualitative and quantitative methods would best suit this phase of research: two focus groups, and a survey administered to all focus group participants. At this point, I did not feel that the prototype was ready for any kind of testing – the interface and its content were still quite loosely defined. I needed to gain insight into whether my user group would prefer a Web site or Web application, and what specific functionalities or issues needed to be addressed.

The historical basis for focus groups lies in marketing research. They have only recently been discovered by the broader social science community (Morgan, 1997). In marketing, a representative sample of individuals from the user group is brought together to discuss their preferences, what they value in an existing product, or what they might like to see in a developing product. This format was very well-suited for this phase of my project.

I decided to collect the views of women, between the ages of 40 and 60, who worked as professionals but not as designers. Gould and Lewis stress the importance of using typical users during this information-gathering phase, not experts (Gould & Lewis, 1985). I felt that designers would unnaturally skew my results, since most are very computer-savvy. I invited two groups of women – one group of women who have never been diagnosed with breast cancer and one group of women who have – to participate in a focus group study which investigated their interest in the concept of action-driven Web site design, and their ideas about the types of activities that they might be interested in when visiting such a site. The focus groups took place at the University of Alberta, in the Fine Arts Building, and each took no longer than one hour.

Focus Groups Overview

Focus Group A: Four female participants, between the ages of 35 and 50, who have, at some point, been diagnosed with breast cancer.

Focus Group B: Five female participants, between the ages of 35 and 50, who have never been diagnosed with breast cancer.

I tape-recorded the discussions. I also asked the participants to fill out a survey prior to the discussions. The purpose of the survey was two fold: to record the participants' individual points of view before engaging in group discussion; and to provide me with some quantifiable data that I could use during the design of my third prototype.

Finding and selecting participants

One of the most challenging aspects of this part of the process was to find a group of willing participants. Gaining access to women who had been, at some point, diagnosed with breast cancer was particularly difficult. In the end, I was grateful for one particular breast cancer group's support and cooperation. The women for the non-breast-cancer group were recruited through posters at the University of Alberta.

Data analysis

I kept the data from the focus groups separate throughout my analysis and evaluation process. As the last step, for both the survey and the focus group data, I compared the findings to see if any correlation existed between the data gathered from the two groups (for all focus group materials, please see Appendix E).

After transcribing the tapes from both focus groups, I began my analysis. There is no one best way to analyze qualitative data, and approaches to data analysis tend to vary considerably (Creswell, 2002). The purpose of my process was to try to make sense of the information. Creswell states that a process of repeatedly cycling through data is a common practice in qualitative research. He suggests reading through the data several times: first scanning the information (first time through), then coding or categorizing it (second time through), and finally generating themes (third time through) (Creswell, 2002). I used this process when analyzing the data from the focus groups.

Survey

For the survey, I wanted the focus group participants to imagine that a Web site had been created especially for women who, at some point, have been diagnosed with breast cancer. This site allowed individuals to create a private and personal Web page that could feature a selection of their favorite online activities. It also allowed them to share some of the information that they had created on their personal page with other women who were also using the Web site. This scenario was followed by a list of potential activities that could be performed on such a site. I asked the women to rate how likely they were to engage in the listed activities, by placing a check mark in the appropriate box. At the end of the survey, I also asked them to list any activities that were not mentioned in the survey, but which they thought might be useful on such a site.

In analyzing the surveys, I first combined the data from both focus groups, then combined the two negative answer categories ("Very unlikely" and "Somewhat unlikely") and the two positive answer categories ("Somewhat likely" and "Very

likely”). Finally, I calculated the percentages for the three groupings of answers (the third was “Undecided”). This way, I was able to flag the answers with the highest and lowest positive and negative ratings.

Summary of survey findings

Eleven out of the twenty-three suggested activities scored a likelihood rating between 65 and 100%:

1. Meet and communicate with other women who are on the system;
2. Keep a personal journal;
3. Look for breast cancer information;
4. Look for meal recipes;
5. Read news related to breast cancer;
6. Take fun quizzes;
7. Play games;
8. Send messages to other women;
9. Send virtual gifts to other women;
10. Send cards to other women; and
11. Visit personal memorials.

Eleven activities scored a likelihood rating between 33 and 64%:

1. Share journal entries with other women who are on the system;
2. Shop for hair accessories;
3. Share parts of your Web page with other women;
4. Visit other personal Web pages;
5. Buy health products;
6. Personalize your Web page with favorite images and/or colors;
7. Share your purchase choices with other women;
8. Create a wish list of items;
9. Write reviews of articles;
10. Share photos; and
11. Create your own Web page.

Only one activity scored lower than 33% on the combined “Somewhat likely” and “Very likely” scales: placing classified ads.

Participants were also asked to list any other activities, not listed on the survey, that might interest them. They provided a wide range of answers, focusing on aids to life

management, specific types of information, connecting with others, and shopping for breast-cancer-related products:

- make child care arrangements;
- financial assistance;
- homeopathic alternatives;
- aides to daily living;
- shop for make-up, maybe do a virtual makeover;
- listen to music;
- a weekly comic strip;
- bra stuff;
- maps;
- doctors;
- drug info;
- reviews of various drugs/therapies by other women;
- FAQ page;
- share inspirational messages;
- list comedy movies;
- assistance for home/child care;
- relaxation/meditation exercises;
- “I think the key thing to focus on is you’re not alone and your experience is not the first or only one. It’s not the end of the world”;
- organize/promote events (eg. races, sports tournaments, fund-raisers);
- treatment info;
- alternative medicine info;
- “the primary focus at this ‘uneducated’ time would be to interact with others for support, fun, info, and general personal growth”; and
- chat rooms.

Even though there tends to be a large difference between what individuals say they would do and what they actually would do (Frascara, 1997), I was quite excited by these findings. They demonstrated strong potential for the content and activities of my final prototype iteration. I feel that the answers stated in the survey and repeated in the focus groups may have a larger validity than those stated in one of these two venues only. On the other hand, the answers that were different from those made during the focus groups may signify a potential lack of validity. However, the purpose of the focus groups and survey was for me to gain a more thorough understanding of the user

group: their computer and Internet experience and activities; general interest in the concept of this thesis; and ideas for possible activities I had not yet considered. Overall, I feel that the focus group and survey methods accomplished these goals quite well, informing my next prototype iteration.

Focus group

My questions varied slightly between the two focus groups, in order to reflect the particular experiences each group brought to the table. Group A had three types of questions: general questions regarding Internet use; questions regarding personal Web site creation; and questions regarding online task systems. Group B four types of questions: general questions regarding Internet use; questions regarding task-driven Web sites; questions regarding personal Web site creation; and questions regarding online task systems.

Summary of findings: Group A

Internet use varied, but all women used it for at least an hour each day. The kind of work that they did on the Internet also varied, from work-related projects such as constructing educational programs, communicating, and searching for information, to personal tasks such as communicating with friends and family, planning trips, and shopping. One woman said: “I couldn’t do my work without the Internet.” Another said that “information gets delivered better that way.” Live communication applications, such as chat programs, were not as popular. Only one person used chat programs “a little bit.”

The women enjoyed three primary things about the Internet: the wealth of knowledge made available to them, the images and visual representations of objects that supplemented or substituted from textual information, and asynchronous communication. Complaints about the Internet centred around three primary areas: receiving unwanted junk mail and spam, spending too much valuable time surfing the Web, and getting lost or misled while looking for information. One woman wanted to be able to get “really interactive” with other people on the Web – becoming more collaborative and artistic through text and drawing.

One of the women was fairly computer illiterate, while the others considered themselves quite literate. They communicated, banked, conducted business, and read news online. For the most part, they considered all these activities easier to do online than in the physical world. They felt the Web was easy to use and saved them a lot of time: “I use the Internet for almost everything: communicating, doing my banking, looking for what’s on television tonight. I don’t get the newspaper anymore.”

Suggestions as to what would make a site useful focused on ease-of-use through clear navigation. Focus Group B made similar comments. Suggestions as to what would make a site useful focused on ease-of-use through clear navigation. This was also similar to the findings from Focus Group B.

When Focus Group A moved on to Personal Web Site Creation, I found that this activity was not nearly as popular as others. No-one from the group had ever tried to build a personal Web site. Overall, the women were unclear as to the uses of a personal Web site – why it would be a benefit to them and to others. One woman thought that she might be interested in creating a personal Web site, if she thought that she had something particularly inspiring to share with her family and friends. One woman summarized the general feeling when she said: “I don’t know the potential of that, haven’t experienced it.”

Then we moved to discussing online task systems. I asked the women to imagine that they had access to a Web site that provides resources and community support to women who have been diagnosed with breast cancer. I asked them specific questions about this scenario. Every one of the women had previously accessed Web sites with information pertaining to breast cancer. Some looked at specific sites that had been recommended to them by others (Canadian Breast Cancer Foundation and the Canadian Breast Cancer Initiative), while others typed keywords into a search engine.

The women brought up some very helpful suggestions for the design of a breast-cancer-specific Web site. In particular, they felt that users would need to feel the information they were accessing was accurate and reliable. They also suggested a few specific types of content: exercise information, top 10s, all the common topics that women would face, newest research, emotional support, inspirational content, and technical and drug information. One woman said, and others agreed: “every woman is at a different stage, perhaps, of their breast cancer diagnosis, treatment, recovery, whatever it is.”

These women, during the course of their illnesses, searched for valid, peer-reviewed medical information, including specific information about treatments and side effects. They also searched for information regarding holistic treatments, vitamins, and immune system boosters. They enjoyed reading other people’s stories about how they and their families dealt with breast cancer. They felt that one of the benefits of the Internet was that “You can go to the computer immediately, where you may not be in the position to go to the library, right away, if you’re feeling down, or if you got to learn something.”

They had a fairly lengthy discussion regarding their own stories. One woman said that hers wasn't particularly remarkable – not enough to be shared with others. The other women strongly disagreed, eventually coming to the conclusion that the main problem is that women who have been through this kind of experience often don't realize how remarkable they are, and how helpful sharing their experiences would be for other women. "I would be impressed to read that," one woman stated.

Since these women were already part of a support network, they demonstrated some bias on the question of whether connecting with other women who have been diagnosed with breast cancer would be important to them. They felt that the Internet offered a great opportunity to connect with other women with similar experiences, from across the world. One woman had communicated with women in New Zealand, sharing photographs through a communal photo gallery. Some women felt that other women were not so lucky as to have physical access to a support group. These women, it was felt, would benefit from having access to an online support network. One woman stated: "It is a great thing to communicate with and meet people who are in the same situation. You can help yourself when you help others." Another said: "I think it would be neat to be able to communicate with those people, get them, they're isolated, to bring them into a group so that they are connected too." Yet another felt that, by connecting with other women in a similar situation, "You kind of think outside of yourself, and how you can help the community of them out there that are struggling, what ever stage they're at in their struggle. And this is the ideal way to be able to reach hundreds and hundreds of women who may not have the ability to have face-to-face contact."

They suggested fun activities such as games, quizzes, and dating, as additions to my system. Similar suggestions were also brought up at the end of Focus Group B.

Summary of findings: Group B

One woman did not use the Internet much at all, while the others used it a few times every day. The women used the Internet for a variety of both personal and professional activities: banking, anything to do with the government, price checking, donating, reading the news, research, recipes, and health information. One woman said: "I think it's terrific." They liked the Internet because of the wealth of information it made available to them. It gave them the ability to get past "the gate-keepers" to information, without having to feel intimidated for asking "stupid questions."

Complaints about the Internet centred around four primary areas: pop-up windows, slow-loading pages, selling tactics, and lack of security. A number of women did not

yet feel comfortable providing any personal or credit card information online. They were impatient with confusing navigation schemes. One woman stated that she hates when Web pages are re-designed all the time, eliminating any of the knowledge that she had gained by surfing the site in the past. Another woman was quite frustrated by graphics-heavy sites because she had a slow Internet connection on her computer at home. A number of women either had no Internet connection at home, or had a slow modem connection. Suggestion as to what would make a site useful focused on ease-of-use through clear navigation.

When we began discussing task-driven Web sites, I found that all but one of the women performed a number of life tasks online: banking, paying bills, looking for recipes, doing taxes, reserving a book at the library, purchasing, and listening to the radio. Only one of the women used the Internet to communicate with other people through a person-to-person chat program, while none of the women had ever used a live chat.

Attitudes towards personal Web site creation were very similar to those in Focus Group A. Only one woman had a personal Web site. Overall, the women were unclear as to how a personal Web site could be useful – why it would be a benefit to them and to others. Some felt that, if they had an interest or a hobby that might be of interest to others, then they would consider creating a personal site. They did not feel confident that anyone would be interested in going to their site: “There’s nothing that I know enough about to share. But I can imagine having some little project like that, as opposed to personal.” They felt that knowing how to create a site was the secondary barrier.

I asked the women to imagine that they could easily create their own Web site: a Web site where one could keep some things personal, and make other things public to share with others. Based on that scenario, one woman was interested in posting pictures and family announcements on such a site, but only if she could limit who could access the information. Another woman had always wanted to write a book telling parents how to get information about a particular childhood illness – where to go, and how to talk to doctors – and it occurred to her, during the course of our discussion, that she could do that quite easily on the Web. She felt a benefit of doing so online, rather than in print, was that other people could then share their own experiences with others as well. The other women were very supportive and excited about this idea: “I would imagine that it would start with a dedicated parent like you, and then, that’s the beauty of the Internet, that you don’t have to commit to the whole thing. Somebody else can say: Yeh, that’s interesting, but you know what my daughter has? She has spina bifida

and it's similar but not the same, and I can see right around the doctor the different conditions that children are struggling with.”

Then we moved to discussing online task systems. I asked the women to imagine that they had access to a Web site that provides resources and community support to women on a topic that they are particularly interested in. I then asked them specific questions about this scenario. Access to information that did not make them feel stupid, anonymity, and security were the focus groups’ primary concerns. The women also wanted access to a support system comprised of real people who are dealing, or have dealt, with similar issues. Specifically, they mentioned chat rooms, with a sidebar containing information about various topics, from exercise to depression and fatigue: “It’s nice to talk to other people that have been there.” One woman mentioned cancer specifically: “I imagine that if you have cancer you can’t go out. And it would be nice to sit there and find that support group, and even when you’re tied into the house for what ever reason you can have that support, get ideas.” They felt that connecting with other people in similar circumstances, especially when it came to such topics as breast cancer, would be very important. One woman shared her experience of trying to diagnose her son with an illness, praising the support and information she received from other parents over the Internet: “You can actually make a connection.” Another woman stated that one of the benefits of the Internet was that “You don’t have to show your face. On the Web you can ... just let it rip.”

RESPONSE TO RESEARCH

Task analysis

In order to answer two of the six fundamental questions that I identified at the beginning of this project (1. What kind of tasks could users currently perform on the Web; and 2. Are there any benefits associated with performing these tasks on the Web as opposed to in real life), I developed four online task categories based on my preliminary analysis of existing task-based sites:

- *Building communities* – involves engaging with groups and/or individuals in either a personal or a professional capacity;
- *Looking for information* – involves searching for, browsing and reading through content; can involve news-based media (magazines, newspapers, journals), information-based media (encyclopedias, newsletters, flyers, etc.),

see appendix g:

Taxonomy of tasks chart.

or recreation-based media (books, stories, etc.);

- *Using resources* – involves carrying out transactions that would otherwise require personal or written exchanges; and
- *Creative expression* – involves making a contribution to existing content and/or creating new content for oneself or others to enjoy.

Definition of benefits

I also identified and defined a preliminary list of six potential benefits of performing tasks online rather than in “real life:”

- *Efficiency* – avoiding wasted time and effort;
- *Money saving* – less money spent;
- *Selection* – a larger assortment of items from which a choice can be made;
- *Fun* – a source of enjoyment, amusement, or pleasure;
- *Privacy* – a mechanism that protects an individual from having any identifying features distributed publicly; includes access to confidentiality; and
- *Personal choice* – offering the power to choose from a number of potential options; offering an alternative.

Following this exercise, I created a preliminary list of online tasks that might be useful to my user group, and tagged them according to which task categories each one fell under, and what potential benefits each might create for the user group if performed online.

These benefits were later confirmed by statements from focus group participants. Hence, this research was helpful in moving my project forward. However, I feel that this part of my research is still at a very preliminary stage. The creation of a more in-depth, tested, and confirmed taxonomy of tasks and list of online benefits is outside of the of the scope of this project. I do feel that work in this area needs to be much more thorough, and should be continued through future research.

PERSONAE

There are different schools of thought with respect to the creation of personae. One option, popular in industry, is to invent them out of whole cloth, to serve as points of focus in discussions between designers and other professionals. The advantage of this strategy is that the characteristics of the personae are under the full control of the designer, who can choose to highlight characteristics and behaviors that seem

see appendix h:

Three personae with two scenarios per persona.

most appropriate for negotiations concerning design. An alternative strategy is to base personae on real persons, but to create them as amalgams of traits drawn from several real people who have served as subjects of interviews or other data collection methods. This approach has the strength of emphasizing the results of actual field research, while at the same time allowing the designer to select traits that are not idiosyncratic to an individual person. For the purposes of this project, the latter strategy was used. However, I modified it to some extent, and each one of my finished personae is an assemblage of three sources:

1. Characteristics of a real person: mostly a loose interpretation of her background, and a photo (with permission);
2. Comments made by women in my focus groups; and
3. Real breast cancer survivors' stories.

Content of the personae

Each persona consists of a number of units of information. Each unit has been written from a particular perspective, and serves a specific purpose:

- *Category* – each persona is tagged with an Internet-user category (the connection seeker, the learner, and the transactor);
- *Photo* – each photo is of a real volunteer. Her life story was also used as a loose basis for the persona;
- *Background* – a brief synopsis of the woman's age, marital status, education, and profession;
- *Needs* – a breakdown of her needs as they relate to the proposed interface;
- *Attributes* – characteristics that may impact her use or requirements of the interface;
- *Personal profile* – written in narrative form, it provides a more in-depth look at the woman's story: her life at the time of and since the diagnosis, her experience of diagnosis, treatment, and/or recovery, and her struggles or challenges. It includes personal quotes. (Though this section is written as a personal story, the choice of data also reflects the woman's possible use of/requirements of the interface); and

- *Scenarios* – each persona also includes two scenarios describing potential life situations. These situations are based on a need that is then met by one or more of the features in the interface.

Use of personae in prototype design

When creating the final prototype, I wanted to demonstrate how the interface would be used by specific individuals. I used each one of the personae as a basis for a set of two designs of their own, personal section of the site. Their needs and scenarios are reflected in the following designs: Hannah's Page, Sandra's Page, and Mary-Anne's Page.

PROTOTYPE DESIGN

PROTOTYPES I AND II

Note: One of my biggest challenges has been to choose an appropriate term to describe a Web site that allowed users to perform tasks. Throughout the project I have used “action-based” and “task-based” to describe the same concept.

The design of the first and second iterations of *My Health and Hope* was meant as a visual exploration of this project. Once the Literature Review had been completed, I wanted to give form to my initial ideas. Putting ideas down on paper allowed me to discuss them with, and gain feedback from other designers. The first two iterations of the prototype were designed as a Web site. The Home page directed users to three different areas of the site:

1. *Information area* – designed like a typical Web site, with a limited amount of content, that originated from one source;
2. *Portal area* – designed like a typical Web portal, with a large amount of information on a variety of health-related topics, with some more advanced interactivity such as shopping and online communities; and
3. *Action area* – designed very similar to a Web channel, with a large amount of content, and number of interactive applications that allowed users to complete tasks.

The last area of the site, the Action area, was my primary interest. However, only after completing the focus groups was I able to resolve the two most fundamental issues that I struggled with while designing the first two prototypes, and that were discussed during the usability interviews: the clarity of the site’s purpose and the credibility of its content.

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see appendix i – k:
Printed versions of all prototypes.
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Clarity of the site’s purpose

After conducting the usability interviews, I realized that one of the fundamental problems with my interface was that the user group could not be expected to possess a clear mental model of this kind of Web site. Even if this model does exist in the design community (I’m not sure if it even does), the users could not be expected to approach a Web site with a knowledge of Web history or Web site types. Hence, the biggest obstacle to the usability, and hence the existence, of *My Health and Hope* may have been that users would arrive at the site and then be unable to distinguish between the three choices (Information, Portal, and Action). They may have been unable to understand the strengths and weakness of each section and, therefore, be able to make an informed decision as to the superiority of the third type (Action). They could not be expected to put that much effort into the act of surfing a Web site. Furthermore,

some percentage of the users may be there only to find a small snippet of information, unwilling to invest the time and energy to sign-up to the site, customize its content, and learn how to use the interface.

Credibility of the site's content

Additional issues arose during the focus groups. The majority of the participants did not yet feel comfortable signing-up to a Web site nor giving out personal information. Some were also concerned about the potential lack of validity in a site's content, as well as the credentials and honesty of the people that they may speak to in a chat room or through a messaging system.

These issues made me reassess how useful and valid a breast cancer, action-based Web site would be for my user group. By addressing the design objectives in the third, and final prototype, I also was able to address the two fundamental issues of clarity and credibility discussed above.

DESIGN OBJECTIVES FOR PROTOTYPE III

My Health and Hope is not for the average Web user. A large number of sites already exist that provide users with news, information, and support relating to breast cancer (I looked at over twenty such sites). The focus of *My Health and Hope* is on meeting the information seeking, service, and support needs of women with breast cancer in a manner that would be faster (Nielsen, 2000), easier (Nielsen, 2000), and/or more pleasurable (Jordan, 2000) than if fulfilled in the physical world.

Women who have been diagnosed with breast cancer have particular information seeking, service, and support needs that can be met through a Web application, the design of that Web application must meet certain technical, content, and functional requirements.

Technical requirements

The Web application had the following technical requirements:

- fit on a 800-pixel-wide screen, with vertical scrolling;
- fast to download, or with a fast-to-download alternative;
- using, or still viewable under, the 256-color palette; and
- no plug-in requirement for majority of content.

Content & functionality requirements

The Web application had the following general content requirements:

- reliable information that covered key subjects that arise during all of the stages of breast cancer – diagnosis, treatment, and recovery;
- control over content;
- a way to share information and resources with family and friends;
- a way to connect to other women who have been, at some point in their lives, diagnosed with breast cancer;
- easy access to other resources and support networks;
- tools for content creation; and
- tools for life management.

Specific content requirements included the following, up-to-date and reliable information and resources:

- entertainment;
- finances;
- homeopathic alternatives;
- aides to daily living;
- shopping;
- directories;
- drug information – side effects, interactions, etc.;
- reviews of various drugs/therapies by other women;
- help in using the application;
- inspirational messages;
- relaxation/meditation exercises;
- tools for event organization and promotion events; and
- variety of communication tools that allow for anonymity and security.

All content needed to be well organized and classified, using a clear structure and an approachable choice of language.

Graphical requirements

The Web application had the following graphical requirements:

- an approachable and friendly look-and-feel;
- a sense of stability, reliability, and professionalism;

- a clear visual hierarchy; and
- control over amount and type of colors, fonts, and graphics.

Delivery requirements

The Web application had a number of delivery requirements. It had to be:

- fast;
- easy; and
- pleasurable.

PROTOTYPE III

Addressing issues of clarity and credibility

A Web application is a Web site that is not advertised on the Web. Functioning in a similar fashion to a computer application, except with the benefits of live updates and synchronous and asynchronous communication, a Web application can be made accessible to only a selected group of users (members). How you become a member is up to the organization that is in charge of the Web application.

The purpose of the Web application would be made clear through the way that it was implemented. The Web application would not be accessible to all Web users, but only to a selected group of users with an identified set of needs and goals. These users would arrive at the first screen of the Web application knowing who was its sponsor, and how it could benefit them. The Web application would not exist in an Internet vacuum – it would exist within an established structure of organizations and individuals that would inform users of its existence, explain its strengths, and guide them through its use.

Below is one scenario of how a user could become a member of *My Health and Hope* (other scenarios would also be possible):

Because of her job, Hannah is aware of the isolation faced by many rural Maritime women. She wants to reach out, and make herself available as a source of information and support. However, also because of her work, privacy and anonymity are important to Hannah. She would like to join a support group of survivors and women who have been recently diagnosed. However, she has very little time that she can dedicate on a regular basis to such an activity, and she is concerned that finding some of her clients in this kind of support group may complicate her professional life.

She contacts the Canadian Breast Cancer Association to find out whether they know of any way that she can offer support to women with breast cancer without a regular time commitment and while remaining anonymous. Karen, the director of the Nova Scotia chapter, knows Hannah from the Breast Cancer Awareness Walkathons that they both participate in. She suggests that Hannah make an appointment to see her, so that Karen can sign her up to *My Health and Hope*. When Hannah meets with Karen, Karen shows her the system and lists its features and advantages: it's accessible from any computer with an Internet connection, it's private and anonymous because Hannah can choose to reveal as little or as much information about herself as she'd like, it's reliable and secure because only those who have been approved by the Canadian Breast Cancer Association can gain access to it; its content is regularly updated because it's connected to the Internet; and all the women that are on the system are Canadian breast cancer patients or survivors.

Hannah decides that she would like to get involved. She fills out a short application form, and chooses a user name and password. Karen accesses the system as an administrator, and enters Hannah into the database as a new member. She gives Hannah a short tutorial, as well as a small information brochure and membership card.

My Health and Hope would be sponsored and administered by either a large breast cancer association such as the Canadian Breast Cancer Association, or by the Government of Canada, through Health Canada. Health Canada has established relationships with content experts that would supply the Web application with recent, credible, and extensive content. Health Canada would also have the resources, both monetary and human, that would be needed to create, implement, maintain, promote, and administer such a system.

This Web application, if run by the government or through a large breast cancer organization (with government support) would have the potential of reaching all Canadian women who have been diagnosed with breast cancer through nurses, hospitals, doctors, social service agencies, and similar establishments.

Addressing needs of women with breast cancer: information seeking

Women who have been diagnosed with breast cancer possess a wide-range of information seeking needs that are primarily based on where they are in terms of their breast cancer diagnosis. For example, women who have been recently diagnosed tend to seek information about treatments, drugs, side-effects, and holistic

alternatives. They want information that is recent, credible, and thorough. They also want information from other women who have been in a similar situation. Hence, *My Health and Hope*, through its association with a trusted and well established organization such as Health Canada, will provide a large amount of credible content, on a variety of topics that relate to breast cancer, that is updated on a daily, weekly, and monthly basis (depending on the type of content).

Furthermore, this content will be customizable through personalization software. Every user will be able to create their own Web page, that is only accessible to them, and that they can personalize with regularly-updated information that they are interested in. For example, Sandra, a newly-diagnosed mother of four, wants specific, easy-to-comprehend information about her type of cancer, as well as information about new treatment options. She also needs advice about how to tell her young children about her illness. Her *My Health and Hope* Web page contains latest news items on topics relating to her particular life situation, and personal chat and group chat communication tools.

Providing the information is not enough. The information must also be accessible and easy to manage. Hence, every user page within the Web Application contains two navigation areas: utilities navigation (located across every page) and primary navigation (located on the left-hand side of every page). The utilities bar provides users with the ability to leave the Web application (log-out); complete their purchase process (shopping cart); change their preferences; receive help; and learn about and contact the administrators of *My Health and Hope*. The left-hand navigation bar gives the user access to all the information and resources available in the Web application:

- *News* – information about recent events or happenings relating to breast cancer;
- *Library* – a collection of informational materials such as e-books, articles, dictionaries, encyclopedias, pamphlets, movies, Web site links, and animations relating to breast cancer;
- *White pages* – a directory service for locating individuals by name;
- *Yellow pages* – a directory service for locating businesses, services, or products according to field;
- *Healthy lifestyle* – information about healthy living including diet, exercise, and stress management;
- *Life management* – resources for managing and systematizing daily tasks; and
- *Fun online* – a collection of fun activities that the user group can engage in online such as games, quizzes, and creative activities.

Utilities navigation – a set of navigational links that remain constant on every page of a site, but do not necessarily contain content.

In order to help users manage this wealth of information, they can create personal holders for this information. For example, Sandra can save her favorite new articles into her own personal library. They will be accessible from a My Library link on her personal page, and will remain there until she removes them.

Addressing needs of women with breast cancer: service

A woman who has recently undergone treatments for breast cancer, for example, may be physically unable to leave her home, or may feel uncomfortable doing so. Mary-Anne, for example, lost most of her hair after rounds of chemotherapy treatments. The treatments also took their toll on her physical well-being, and she is unable to leave her home for long periods at a time. By using the resources for managing and systematizing daily tasks found under Life management, Mary-Anne can pay bills, and buy groceries and hair accessories without ever leaving her home. Since *My Health and Hope* uses a credit card protection system, users can feel a measure of comfort in knowing that if their information is ever stolen, it will not be able to be used by an unauthorized party.

In order to be most useful to its users, *My Health and Hope* would need to be affiliated with all major Canadian banks, utility companies, grocery stores, drug stores, holistic stores, and breast cancer clinics (plus others).

Addressing needs of women with breast cancer: support

Online support groups offer participants many of the therapeutic features of face-to-face groups, with the added advantages that these features are available to users in the comfort and privacy of their own homes and at the time of their choosing. Online conversations can be monitored to ensure proper etiquette. The Web application saves a record of every conversation, and users can remove other users from their contact lists. *My Health and Hope* provides users with a number of different ways to communicate with other users to receive support:

- *Personal chat* – allows users to send messages synchronously and asynchronously to individual users. The Personal chat system includes a directory of members who are categorized by age, interests, time since diagnosis, location, and/or type of cancer. Each user chooses how she wants to be categorized, if at all. She also chooses how she wants to appear to the other users (name and image);
- *Group chat* – allows users to send messages, synchronously, to one another. All messages can be read by the other users who are involved in that

particular chat. A group chat is continuous, and a user can enter and leave the conversation at any time. As in the personal chat, the user chooses how she wants to appear to the other users;

- *Email*; and
- *Blogging* – allows users to create a Web page that is then accessible to other users of *My Health and Hope*. Users can write diary entries, receive comments about what they have written from other users, share their favorite content.

Hannah, for example, a ten-year breast cancer survivor, uses *My Health and Hope* to reach out to women who have been recently diagnosed. She wants to remain anonymous, so she does not share her real name or photograph while communicating one-one-one or in a group with other women.

Addressing design objectives

The content and functionality objectives listed in Section 4 were addressed above, in the three *Addressing the needs of women with breast cancer* sub-sections. Below are descriptions of the ways in which the design of *My Health and Hope* addresses technical, graphical, and delivery requirements.

Technical requirements

My Health and Hope has been designed to fit the 800-pixel-wide screen, with vertical scrolling (Nielsen, 2000). Since its content and look-and-feel is customizable, it can also be modified for fast download by eliminating graphics and such high-end functionality as personal and group chat, and to be viewable using the 256-color palette. Unfortunately some functionality such as video and synchronous communication require plug-ins. Any required plug-ins would be installed by the Web application the first time a user logged-in.

Graphical requirements

My Health and Hope has been designed to be fully customizable. A user can choose her color scheme and the images that appear on her personal page. A user can make these choices either from a set of pre-designed alternatives; by choosing colors from a color palette and images from an image palette; or by choosing images that are located on her own computer:

- *Hannah's page* – Hannah chose a pre-set color and image scheme called *Spring Meadow*. It consists of a pastel color scheme and a flower image scheme;

- *Sandra's page* – Sandra chose her own colors from a color palette (green, red, and blue) and chose images of her own children as the image scheme; and
- *Mary-Anne's page* – Mary-Anne chose a pre-set color scheme called *Pretty in Pink*. She chose not to have an image scheme.

The graphical elements that can be customized (colors, fonts, and images) are confined to a grid structure that remains as a constant on all of the pages. The identity of the Web application and the utility bar and left-hand navigation change color but remain in the same location on every page. The white lines that surround all of the elements and the thick bars at the bottom and right-hand side also remain in the same place and size. This level of consistency gives the Web application a sense of stability, reliability, and professionalism.

Delivery requirements

Fast

After an initial sign-up process through an agency or health professional, a woman with breast cancer can use *My Health and Hope* in the comfort of her own home. This allows her to seek information, use services, and receive support as quickly as it takes her to walk to and turn on her computer. She can take care of some tasks even quicker by setting up schedules that will pay her bills and purchase items automatically.

Easy

A woman with breast cancer can seek information, use services, and receive support at her convenience – any time, day or night. She does not have to wait for a bank to open, or for a monthly breast cancer support meeting. She does not have to arrange for someone to drive her to the store to buy groceries – groceries can be delivered to her front door. She does not have to go to the library – the latest news and information are displayed on her personal page every morning.

Pleasurable

A woman with breast cancer can receive pleasure on a sociological level by sharing support with other women who have been in a similar life situation. She can receive pleasure on a psychological level from knowing that she is in control of her own life: taking care of her groceries, reading materials, and finances. She can receive pleasure on an ideological level by reading other women's inspirational stories, sharing her own story with others, and customizing her environment with favorite colors and images.

FUTURE STEPS

The final prototype of *My Health and Hope* is an idea that has been given visual form. It exists as a set of HTML templates that include: the Home page and the Welcome page, as well as three examples of individual user pages: Hannah's *My Health and Hope* page; Sandy's *My Health and Hope* page; and Mary-Anne's *My Health and Hope* page. The specific content of each one of the individual user pages is based on the situation and needs identified in that user's persona and scenarios.

In order to become a real, functioning resource for women with breast cancer, *My Health and Hope* would need to undergo the following (also outlined in Figure 3):

- *Recruit support agency* – in order to gain access to the required monetary and human resources, *My Health and Hope* would need to be sponsored and administered by either a large breast cancer association such as the Canadian Breast Cancer Association, or by the Government of Canada, through Health Canada;
- *Recruit team* – a team of technical experts is needed to develop the back-end technology for the functionality of a Web application. A separate team of breast cancer experts is also needed to help develop the written, media, and graphical content;
- *Develop a complete and functional HTML prototype and conduct usability testing* – this would be an iterative process, where representatives from the target user group would be asked to interact with the Web application and offer feedback as to how fast, easy, and pleasurable it is to use. This feedback would then be used to modify the Web application;
- *Develop final Web application* – once the design of the Web application has reached a previously-determined level of usability, the final product would be developed;
- *Train staff and implement the Web application* – women who have been diagnosed with breast cancer would gain access to *My Health and Hope* through a referral by their nurse, doctor, or social worker. These professionals would need to be trained in how to promote and administer the system. They would also be provided with support materials such as brochures, posters, and member cards that they could post in their environment and distribute to potential users; and
- *Gather feedback* – once the Web application has been implemented, and after a pre-determined amount of time in operation, it should be assessed, once again, for its usefulness and usability. This should

occur both from the direct users' (women with breast cancer) and support staff (nurses, doctors, social workers, etc.) perspectives.

Once this feedback is collected and evaluated, *My Health and Hope* may need to undergo changes to design, content, and/or functionality.

All of the above-mentioned steps, however, were outside of the scope of this design research project.

CONCLUSION

Designing a Task-Based Web Application was an interdisciplinary design research project. Building on research and methods from a number of fields: visual communication design, psychology, usability, computer science, and health care, my goal was to design a task-based Web application to meet some of the needs of a specific user group: women with breast cancer, in a manner that would be faster (Nielsen, 2000), easier (Nielsen, 2000), and/or more pleasurable (Jordan, 2000) than if fulfilled in the physical world.

The primary focus of my exploration while working through this project was the application of research methods, traditionally used by the social sciences, to the design process. While I was unable to practice all of the methods, since some were simply outside of the scope of the project, I was still able to gain an insight into how such research methods are used, what resources are required, and how they inform design.

Exploring these research methods culminated in three, specific, outcomes:

1. *Toolbox of design research methods* – qualitative and quantitative methods such as focus groups, surveys, Web site critiques, and personae and scenarios may be used in future design research projects and design practice;
2. *Qualitative and quantitative data* – specific findings from the focus groups, surveys, and Web site critiques, regarding general Internet use and perceived Web site usefulness and usability, supports data gathered by other researchers and may be used in future design research projects and design practice; and
3. *Prototype of a Web application for women with breast cancer – My Health and Hope* has the potential of being developed into a real, available resource for women with breast cancer. Planning how to make that a reality, however, was outside of the scope of this project.

This visual communication design research project had or may have an impact on three broad levels:

1. *Personal* – it made an impact on me as a designer;
2. *Communal* – it has the potential of having an impact on the design community; and
3. *Societal* – it has the potential of having an impact on individual Canadians (in this case, women with breast cancer.)

From communal and societal perspectives, these outcomes relate to the application of three design principles to the design process, via specific tools and methods. The design of *My Health and Hope* was guided by one broad principle: that, when viewed through the user-centred approach, design can matter profoundly and act as an instrument in constructing a positive intervention in the lives of people. Within this one broad principle, exist three design principles that focus on the designers' role in constructing such interventions. Designers must gain an understanding of the following (Frascara, 1997):

1. The individuals in whose lives they are trying to intervene (user group);
2. The tools that they have to work with; and
3. The designer's role within the process.

Through this visual communication design research project I demonstrated that, by using an interdisciplinary approach, these three principles can be successfully integrated into a design process (detailed in Figure 4). This successful integration resulted in the following conclusion: a task-based Web applications has the potential of functioning as a significant, positive intervention in the lives of women with breast cancer.

Understanding the user

In order to gain a more thorough understanding of the user, their life situation, and the potential context of a Web application's use, I selected two empirical research methods: focus group and survey. By using these tools, I gathered quantitative and qualitative data that was both measurable and rich in detail. For example, one of the key points raised by women in my focus groups was that women with breast cancer experience different types of needs during the course of their illness. The illness, typically, progresses through three stages: diagnosis, treatment, and recovery. The three types of needs: information, service, and support, occur in each of the three stages of breast cancer, but the content and resources that may meet these needs may differ.

Health-related Web sites for women who have been diagnosed with breast cancer, have tended towards meeting only information needs. With the result that any essential activities for these women have not been made available in an online format. By adapting an orientation that emphasizes the importance of meeting user tasks, the range of needs that can be fulfilled online is extended in ways that are beneficial to women at every stage of the illness. Furthermore, by providing users with one, credible and customizable source for all of their breast cancer-related needs, these needs can be

met in a way that is faster, easier, and more pleasurable than if fulfilled in the physical world. By involving potential users in the design process I was able to understand this context. Thus, the likelihood of providing users with a more complete set of appropriate tools that could meet some of their needs was increased.

Understanding the tools

In order to gain a more thorough understanding of available research tools and methods, as well as existing Internet technologies, I selected two research methods: literature review and Web site critiques. By using these tools, I was able to understand and select appropriate methods for further study: focus groups and survey, and personae and scenarios. I was also able to discuss existing Internet technologies with my focus group participants, and gather their feedback as to their preferences regarding these technologies. I was also able to critically evaluate the design of existing Web sites. These analyses informed specific design decisions of *My Health and Hope*, such as page size, plug-in use, typography, imagery, etc.

Creating personae and scenarios was very helpful in maintaining users at the forefront of every design decision. Hannah Kaminska, Sandra Billington, and Mary-Anne White became critical participants in the design process.

Understanding the designer's role

Design may be something clichéd and insignificant, but it can also be something very meaningful: a key factor in improving our earthly existence (Heskett, 2003). Designers possess important skills, tools, and knowledge, enabling them to create objects and environments which have the potential of making a positive impact on the lives of people.

However, designers can not work alone towards this positive impact. They must work with other professionals: content and technology experts who can guide them in areas that are not within their professional expertise (Frascara, 1997). That is why, subsequent phases of this project would require the involvement of health care professionals, social workers, computer programmers, and others who can inform the development of *My Health and Hope's* content, functionality, and implementation strategies.

Broader context

From a broader perspective, an interdisciplinary approach, user-centred design strategies, and an emphasis on the provision of online tasks can be applied to other life situations. Web applications may have the ability to meet some of the needs of other individuals who are unable to fulfill these needs through physical means. Examples include, but are not limited to, the following:

- people living in remote and rural areas;
- people with medical issues;
- people under house arrest;
- the elderly; and
- the disabled.

Details of the design intervention required in each of these cases would differ according to the specific needs of that particular user group. However, the design process demonstrated through this research project could serve as a solid basis for the design of these kinds of interventions.

This Web application would need to be integrated into current health care practices of advising breast cancer patients. An information/education campaign would need to be designed to inform nurses, doctors, social workers, and other medical professionals who come into regular contact with women who have been diagnosed with breast cancer, of the existence, benefits, and function (Kotler, Armstrong, Cunningham, & Warren, 2001) of *My Health and Hope*, so that they would begin recommending it to their patients.

Long-term outlook

Increasingly, the Internet is becoming an important source for health information: more than 70,000 Web sites disseminate health information and over 50 million people seek health information online (Cline & Haynes, 2001). Moreover, some of the 70,000 health Web sites currently available, go beyond providing information: they allow users to find others with similar conditions or life situations, communicate with health professionals, purchase medications and groceries, and engage in entertaining activities. These Web sites have the ability to meet more of the users' information, service, and support needs than a more traditional, "brochureware" type of site that only provides information. Designers need to take advantage of this trend and design Web sites that have the potential to play a more significant role in users' lives.

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APPENDICES

- A: Literature review template and sample review
- B: Web usability guidelines
- C: Web site critiques
- D: Usability tests via small group interviews
- E: Ethics Review documents
- F: Focus groups and survey
- G: Taxonomy of tasks
- H: Personae and scenarios
- I: Prototype I
- J: Prototype II
- K: Prototype III
- L: Gallery exhibit
- M: Gallery exhibit materials
- N: Bibliography

A: LITERATURE REVIEW TEMPLATE AND SAMPLE REVIEW

Preece, J. (1998). Empathic communities: Reaching out across the Web. *Interactions*, 5(2), 32–43.

Keywords

Empathic communities, medical information on-line, emotional support, user-oriented design.

Purpose/goals

On-line communities have great power in connecting people who need to discuss particular emotional or medical problems. These communities encourage learning through shared experiences. They enable participants to offer and receive emotional support in a climate of trust, equality and empathy.

The purpose of this article is to discuss the important role that empathy plays in informal on-line communication.

Major claim(s) and summary of argument(s)

Pros of on-line support groups:

- time constraints can make it difficult for people to physically attend local support groups – the Web is a good alternative;
- instead of meeting 5 or 10 other patients with the same problem, it is possible to reach hundreds and to find people of the same gender and age;
- distance and time can be serious obstacles – not so on the Web;
- some communities don't have all of the resources that someone might need – the Web is a good alternative; and
- comparing stories about diagnoses and treatments makes patients better informed for future doctor visits.

Talking with others:

- allows you to find out what to expect next during an illness; and
- people who share the same experiences can offer empathy.

Empathic communities:

- groups in which communication between members is strongly empathic are called empathic communities to distinguish them from groups that are primarily concerned with factual information exchange;
- these tend to have a strong focus on medical or personal problems;
- their members want empathy and emotional support;
- some of these groups are closed or have mechanisms that discourage aggression or superfluous posting;
- the amount and type of activity and the demographic of the population define its character;
- design of the supporting software influences community behavior; and
- most participants want to know what it was really like for other people.

Case study:

- Bob's ACL Bulletin Board;
- <http://www.cnct.com/~bwillmot/knees/wwwboard/>;
- started in April 1996;
- by Oct. '97 there were 9,000 messages in the archive;
- gender ratio: 4 males to 1 female;
- age: between 20 and 40 years;
- love sports;
- 500 archives messages were analyzed, sampled in batches of 100, at approx. 2-monthly intervals, posted by 251 different people;
- 76.8% of posts were empathic to some extent;
- 17.4% of posts were purely factual; and
- 5.8% other.

Terms:

- CSCW – computer-supported co-operative work; and
- CMC – computer-mediated communication.

The future / changes:

- basic tailoring facilities;
- emoticons; and
- better usability.

- easy search of previous messages and archives;
- search and contact others that are similar to you in some way;
- ways of dealing with problems like flaming;
- ways of dealing with newcomers – efficiency has to be balanced ; with supporting empathy;
- privacy issues;
- misleading information – guarding against impostors and scams;
- being able to click on terms found in messages and call up a browser;
- keeping personal files; and
- past behavior tracking system.

Reflections

I found this article very useful. It had a clear direction and thesis statement, with a case study to support its theories. I think a well designed system would include all of the things described in this article, plus many more innovations, for a well rounded system.

Links to literature (Generative themes and justification/elaboration)

Carroll, J. M. & Rosson, M. B. (1996). Developing the Blacksburg Village.
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B: WEB USABILITY GUIDELINES

The following is a summary of specific guidelines from Jacob Nielsen regarding Web interface design.

Page Design

Screen Real Estate – Web pages should be occupied by content of interest to the user. Navigation is not the goal in itself, and should, therefore, be minimized. Content should account for at least half, but preferably eighty percent, of every page. Navigation should be kept below twenty percent (Nielsen, 18-25).

Cross-platform design – On the Web, the user controls the way that he or she navigates through the pages, as well as the way that he or she sees the pages. Users can take paths that were not intended by the designer – entering from a third-level navigation page, not from the Home page, for example. Web designers need to accommodate and support user controlled navigation through the pages. The way that the pages appear is also largely controlled by the user's computer equipment. Users could be viewing the site on a small (14 inches), low resolution (displaying 640 x 480 pixels) monitor, or on a large (21 inches), high resolution (displaying 1280 x 1024) monitor. The user could have a monitor that can display only 246 colors, or one that can display millions of colors. The user's connection to the Internet could be very fast (through a cable or high speed connection), or very slow (through a modem). He or she could be using a wide variety of computers, which vary in sophistication and speed. The computer's operating system, whether Macintosh-based or Windows-based, is also an issue, as is the make of the browser that is installed on the system. All of these differences will impact the way that the Web site appears to the user (Nielsen, 25-36).

Response times – Users need response times of less than one second when moving from one page to another if they are to feel like they are navigating freely. One tenth of a second (0.1) is the limit for having users feel that the system is reacting instantaneously. One second (1.0) is the limit for the user's flow-through of thought to remain uninterrupted (the user will notice this delay). Ten seconds (10.0) is the limit for keeping the user's attention focused. For longer delays, users tend to turn to other tasks while waiting for the computer to finish (Nielsen, 42-49).

Frames – Frames should be used as sparingly as possible. There are several reasons for this rule. If a user links to a page in a site that has used frames, he or she may or may not be able to return to the exact same page on subsequent visits. On smaller screens,

frames take up valuable screen real estate. Many browsers can not print pages that are constructed through frames. Finally, search engines have trouble with frames (Nielsen, 85-92).

Linking

Link descriptions – Hypertext links are anchored in the text so that the user knows what can be clicked to follow the link. The anchors should not be overly long because users scan pages for the links to see what they can do on the page. Only the most important information-carrying terms should be turned into hypertext links. Avoid using “Click Here” as the anchor point. One example of improper linking is: “For background information on elephant mating behavior, click here.” An example of proper linking is: “We have additional background information on elephant mating behavior.” Underline the words that are the most important. Ideally, these words should provide a short summary of what kind of information will be available upon clicking (Nielsen, 55-59).

* Note: There are two types of links: structural navigation links (these outline the structure of the information space); and associative links within the content of the page (these links are usually underlined words).

Link color – Web browsers are coded to use two different colors to display links: links to pages that the user hasn't yet visited are in blue, and links to pages that the user has already visited are in purple or red. It is critical for Web usability for designers to retain this color coding system. When non-standard Web colors are used, users have a difficult time remembering which parts of the site they have already visited (Nielsen, 62-64).

Writing for the Web

Copy editing – Since research has shown that reading from computer screens is, on average, twenty-five percent slower than reading from paper, you should write fifty percent less text. Organizations should employ professional copy editors to go over, and re-write if necessary, the text on all of the pages (Nielsen, 101-104).

Scannability – Users tend not to read screen text fully. Instead, users scan text and pick out keywords, sentences, and paragraphs of interest. Therefore, structure articles with two or three levels of headlines. Use meaningful headings that clearly inform the user of what they are about the read. Bulleted lists and similar design elements should be used to break the flow of uniform text (Nielsen, 104-110).

Plain language – If the most important material is presented up-front, than the user will not be forced to read the entire paragraph to gain the meaning of the text. Often, users will only read the first sentence of a paragraph. Therefore, it is important to use topic sentences, as well as give each idea its own paragraph. Use language that the user

is most likely to be familiar with, rather than technical jargon that is familiar to only the selected few (Nielsen, 111-112).

Page titles – Every page has a title that appears in the top-most left corner of every browser. Good page titles are important since they are often used as the main reference to the page. Page titles are also used in bookmark lists and history lists. When stored as a bookmark, the page title is taken out of its context and stored independently of any additional information. It is important, therefore, that the page title be short, descriptive, and unique. Every page on the site needs its own, unique page title (Nielsen, 123).

Legibility – Use colors with a high contrast between the text and the background. Apply either plain-color backgrounds or very subtle patterns. Use font sizes that are big enough that they can be read even if the user does not have perfect vision. Make the text stand still – moving, blinking, and zooming is much harder to read than static text. Standard typography principles also apply, with minor adjustments: text should only be left justified; small text is more readable on the screen if it is in a sans-serif typeface; and avoid using all caps (Nielsen, 125-126).

Site Design

Home page – The Home page is meant to answer a very important question: “What does this site do?” Home pages and interior pages should always share the same design style, but the Home page should always be treated differently. The Home page should not have a Home button. It should, however, have the following: a larger logo; the site’s top-level navigation scheme; a list of current news or special promotions; and a search feature (Nielsen, 166-173).

Navigation – The navigation system helps the user answer three fundamental questions: where am I; where have I been; and where can I go. The user’s current location needs to be shown as relative to the Web as a whole, and as relative to the site’s structure. The Back button and standard link colors help to answer the “Where have I been” question, while the visible navigation options answer the Where can I go question (Nielsen, 188-197).

Site structure – The structure of the site should be determined by the tasks that the users want to perform. The two most important rules of a good site structure are to have only one, and to make it reflect the user’s view of the site, its information or services (Nielsen, 198-213).

C: WEB SITE CRITIQUES: TEMPLATE

1.0 Administrative

- 1.1 Image Keywords
- 1.2 Category
- 1.3 Path

2.0 Type of Site

- 2.1 Target Audience
- 2.2 Purpose

3.0 Content Assessment

- 3.1 Structure
- 3.2 Hierarchy & Organization (navigation – position, type, levels, consistency)
- 3.3 Consistency
- 3.4 Clarity
- 3.5 Language

4.0 Graphical Assessment

- 4.1 Look & Feel
- 4.2 Imagery & Graphics
- 4.3 Tone
- 4.4 Colors
- 4.5 Type

5.0 Functionality

- 5.1 Tasks & Actions (what can the user “do”)

6.0 Technical assessment

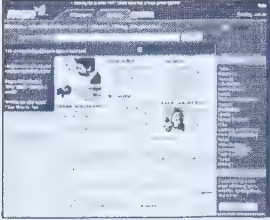
- 6.1 Download Time
- 6.2 Resolution
- 6.3 Color Palette
- 6.4 Plug-ins
- 6.5 Restrictions (passwords, sign-ups)

7.0 Personal reflections

C: WEB SITE CRITIQUES: DETAILED FINDINGS

MSN.COM

Portal: <http://www.msn.com> “MSN” by Microsoft Networks, 23 June, 2003



1.0 Administrative

1.1 Image Keywords

MSN-Home.jpg; MSN-health01.jpg; MSN-health02.jpg; MSN-women.jpg

1.2 Category

- Looking for Information
- Using Resources
- Building Communities

1.3 Path

Known site.

2.0 Type of Site

2.1 Target Audience

MSN.com is meant to catch a fairly wide audience, with a specific focus on middle to upper class professionals, with at least some college education. Looking at the twenty MSN Channels, one of the main features found on the Home page, allows for a quick snapshot of the target audience and its potential interests. MSN Channels includes Autos, Business, Careers, City Guides, Entertainment, Family, Health, Sports, Travel and Women. The Home page also features stock numbers; news; access to email; a find feature that allows you to look for potential mates, airline tickets, your ancestors and many more; shopping links; and fun links (cartoons, horoscopes, lottery results, etc.)

2.2 Purpose

MSN.com is a Web portal. A Web portal provides the visitor with an assortment of links and information that are centered on a general topic, theme, or service provider. MSN.com is one of the largest portal sites available on the Web right now. It provides its users with a large variety of categorized, regularly updated content.

3.0 Content Assessment

3.1 Structure

The Home page of the portal features content that has been pulled from its theme-based sub-sections. Since the portal's Home page is meant to act as a jumping off point

to other content, almost every single item on the page is a link. The visitor can use the page to get a general idea of what is happening in all of the content areas, or use it to jump to the page of a particular topic of interest. For example, the June 29 MSN portal page featured a story on Delicious 4th of July Recipes. When you clicked on the link, you were directed to the Women section of MSN.com to read this and other related stories. (see MSN-women.jpg)

3.2 Hierarchy & Organization

(navigation – position, type, levels, consistency)

Almost all of msn.com is navigation. Global navigation is displayed in tabs: MSN Home; My MSN; and Sign in. Located below the tabs is another row of global navigation, this time displayed in text buttons: MSN Home; My MSN; Hotmail; Search; Shopping; Money; and People & Chat. Below that is a Search the Web box.

The page is divided into three main columns. The left and right columns have long lists of links. Intermittent amongst the links in the left and right columns are linked advertisements. These include:

MSN Internet Services: Internet Access Specials; MSN 8 Deals

Find: Air Tickets; Auto Price Quotes; Buy a House; Find a Job; Hotel Deals; Maps & Directions; MSN Messenger – New!; Old Friends; Personals

Refinance Loans; Rent an Apartment; Search for Ancestors; Weather; White Pages; Yellow Pages; More...

Shop: Auctions; Best Prices Palm PDAs; Buy Books; Buy New Music; Free Credit Report; Save on a New PC; Send Flowers; Used Car Deals; More...

Fun: Cartoons; Downloads; Event Tickets; Free Games; Free IQ Test; Go Mobile; Greeting Cards; Hear Music; Horoscopes; Lottery Results; Movie Times; Photos; Sports Scores; TV Listings; Win a Disneyland Trip

MSN Channels: Autos; Business; Careers; City Guides; Entertainment; Family; Fitness & Recreation; Games; Health; House & Home; Kids; Learning & Research; Love & Relationships; News; Slate Magazine; Sports; Tech & Gadgets; Travel; Women; My MSN; Spotlight

Featured Today: MSN Careers

MSN Worldwide: US - Spanish; Australia; Canada; China; Germany; India; Japan; Korea; Mexico; Singapore; UK; More...

The middle column has short paragraphs of linked content. This column is also subdivided into two or three smaller columns. The content is segregated through colored backgrounds and thin key lines.

On subsequent pages (MSN Channels), the three column layout is maintained. The MSN identity spans the top of each page. The left column contains primary and secondary level navigation. The right column is reserved for advertisements. The middle column is treated very similarly to the Home page, with short paragraphs of content linking to the full articles. This layout is present across many of the channels, but not all. Entertainment, for example, features the identity and primary navigation across the top, ads still on the right, and content spanning across the left and middle columns.

3.3 Consistency

MSN.com is quite consistent considering that it encompasses a very large variety of topics and interest areas. The fact that the MSN identity has been placed in the same place and in the same size on all pages helps to create a sense of location for the viewer: the feeling that I'm still on a site sponsored by MSN. Each one of the different Channels is color coded. Typefaces, type treatments, colored bars, and key lines are also part of the look and feel of the entire site.

3.4 Clarity

MSN.com is a very large site. I do not feel that its designers have yet achieved the best possible way to deal with this vast amount of content. Some of the navigation is unnecessarily repeated, creating a sense of confusion as to whether the links direct you to them same or to a different place.

In their present form, the pages on MSN.com have too many links and too much content. The clutter of words, links, images, and colors makes reading impossible, and scanning uncomfortable. Instead of looking for a specific piece of information, my instinct was to click on the link that caught my eye first. I feel that more research is needed into these kinds of Web environments: how users experience them; whether different users experience them differently; whether motivation plays a role in how they are experienced; how much time is spend investigating such spaces; etc.

3.5 Language

MSN.com uses bits of language to tantalize towards the next mouse click. Most of the pages contain short sentences or chunks of sentences. On the article pages, the langue is similar to that found in popular magazines, targeted at a similar audience. The news

stories are similar to or directly taken from CNN, Newsweek or Times; entertainment stories are either similar to or taken from Entertainment Weekly, and E! Now; etc. The type of language that is used on MSN.com is geared towards scanning the page and digesting its many diverse bits of content. If combined with a less crowded, more organized layout, MSN.com would be a quick and easy way to get to a large amount of information.

4.0 Graphical Assessment

4.1 Look & Feel

The terms that might best describe the look and feel of the MSN site are cool, professional, and entertaining. The cool and professional sides of the site are demonstrated mostly through the choice of colors and the clean structure of the site. The grid is very organized and controlled. My feeling is that the color choices are meant to present an adult-fun persona. The dark navy tones, complemented with beige and small chunks of pastel green, yellow and red, create a site that could be comfortably viewed while you are on your computer at work. The addition of the brighter tones gives the site a brighter appearance, more enjoyable appearance. After all, MSN.com is not just for business, it is also for fun and pleasure. The rigid grid structure is meant to communicate a sense of ease-of-use, functionality, and time saving.

4.2 Imagery & Graphics

The graphics and images that are used on MSN.com tend to serve only one function: to decorate/supplement the adjacent features. For example, the Best Wedding Songs teaser features a photo of a bride and groom; the Emeril's Patriotic Feast teaser features a photo of a young boy eating a summer treat; and the Falling Angles teaser features a photo of Drew Barrymore.

The photos tend to be small in size, with little consistency in image treatment. Few graphics are used – mostly logos and icons of sponsoring or affiliate companies.

4.3 Tone

The tone of the site is professional and easy. It is warm yet competent. Again, I would say that the mixture of functionality through organization; and approachability through the colors and imagery creates these impressions.

4.4 Colors

On the Home page, the color palette is made up primarily of shades of navy blue. The color palette changes according to the channel. The MSN Careers channel, for

example, is made up primarily of shades of green, while the House and Home channel is purple. The color palette in each one of the channels is made up of colors that complement the primary color used. The majority of menu items are in white, while most of the body copy is in black. Headings are colored according to every channel's complementary color palette.

4.5 Type

All navigation and text is in a sans-serif typeface – Arial or Helvetica. The primary navigation items, as well as the headings for all other navigation and the headings for the body copy, use Helvetica or Arial bold.

5.0 Functionality

5.1 Tasks & Actions (what can the user “do”)

- check email
- shop
- chat with others
- buy, sell, trade stocks
- search for a variety of items including: ancestors, jobs, apartments, dates, best airline deals, etc.
- refinance loans
- bid on auction items
- play games
- send greeting cards
- view and post photos
- customize the interface

6.0 Technical assessment

6.1 Download Time

Aside from the Home page, the site uses mostly HTML text and color-filled table cells. The site is well optimized, appearing almost instantly when viewed through Internet Explorer, on a PC, with a high-speed line. It is slower when viewed over a modem, but still falling within the acceptable waiting time.

6.2 Resolution

The site fits horizontally on an 800x600 pixels screen, but scrolls vertically.

6.3 Color Palette

The site conforms to the 256 color palette.

6.4 Plug-ins

The site does not require any additional plug-ins.

6.5 Restrictions (passwords, sign-ups)

You can use the site without signing up, however, in order to access some of the more advanced, personalized features you have to create an MSN passport account that gives you access to email, personalization features, and the radio. All basic services are free. Advanced email, radio, and chat features are provided at an additional cost.

7.0 Personal reflections

7.1 Impressions and Observations (my gut feeling)

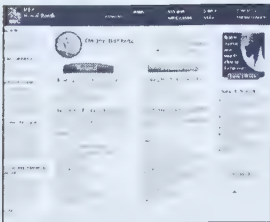
As far as having a lot of content and numerous things to do, this site is extremely functional. However, as far as availability of access to all of this information, the site falls slightly below the usability bar. The amount of information is at times quite overwhelming. The navigation is hard to scan, and most of the time, you have to click through a number of pages before you can get to the information that you are really looking for. I have seen a number of large Web portals, and all of them seem to suffer from these problems.

7.2 Links to Other Sites

- Yahoo.com: <http://www.yahoo.com>
- Netscape.com: <http://www.netscape.com>
- AOL: <http://www.aol.com>

ROYALBANK.COM

RoyalBank.com: <http://www.royalbank.com> "Online Banking" by Royal Bank,
June 22, 2003



1.0 Administrative

1.1 Image Keywords

Royal-AccountBalance.jpg; Royal-ChequingDetails.jpg;
Royal-OrderCheques-PastOrder.jpg; Royal-OrderCheques-TagLines.jpg;
Royal-OrderCheques-TypeChoices.jpg; Royal-OrderCheques-Welcome.jpg;
Royal-PayBills.jpg; Royal-PaymentHistory.jpg; Royal-OnlineBanking-Home.jpg;
Royal-Home.jpg

1.2 Category

Using Resources

1.3 Path

Known URL – own bank.

2.0 Type of Site

2.1 Target Audience

- people with a computer and an Internet connection either at home or at work
- both male and female
- RBC customers
- for more precise target audience you would need to do a correlation between typical Canadian Web users and typical Canadian bank users. Does RBC collect data on their own customers?

2.2 Purpose

- online banking is one out of many services provided by the Royal Bank
- from Royal Bank statement on online banking: Online Banking is anywhere you have Internet access, so it's never been more convenient to manage your finances. With Online Banking, you can quickly and easily: Check your account activity and balances; Transfer funds and receive and pay bills; Contribute to your RRSP and double-up on your mortgage payments; Plus so much more. Enjoy all this convenience and control within the safety, security and privacy of Online Banking, 24 hours a day, 7 days a week.

3.0 Content Assessment

3.1 Structure

Online Banking is only one of many sections of the Royal Bank Web site. The Royal Bank Web site has a main Home Page (Royal-Home.jpg). From there you can navigate to the Online Banking Section Home Page (Royal-OnlineBanking-Home.jpg).

Online Banking has a sign up and a log in process. Both processes can be performed online; the sign up process can also be performed over the phone. In order to use the system you have to be a Royal Bank customer.

3.2 Hierarchy & Organization

(navigation – position, type, levels, consistency)

Once inside the Online Banking System, the user is first presented with an Account

Balance screen. The user performs the majority of actions in the middle of the screen. Content and function are one (Royal-AccountBalance.jpg). The majority of items on each screen are clickable. Approximately half the items provide information and act as buttons for more detailed listings. The other buttons are broken up into three categories: Self Services; Research, Purchase and Apply; and Customer Service. The options for direct action, found under Self Service, are as follows: Pay Bills and Transfer Funds; View Accounts from Other Institutions; and Copy to Accounting Software.

Most of the navigation within the site happens linearly. The user selects an action, then proceeds step-by-step through a series of screens, each time making an appropriate selection or typing in a command. The three universal buttons are: Update Profile, Help, and Sign Out.

3.3 Consistency

Once you have signed up, you use your client card number and chosen password to log into the system. Once you are logged in, the content of the interface changes to reflect your personal information – name, accounts, account numbers, balances, and action history. Subsequent detail screens are also populated by content that is personal to each user. The interface itself, however, remains consistent across all users – grid structure, hierarchy, colors, Royal Bank identity, and options.

The site is fairly consistent in its placement of items on the screen, typography and colors. However, when the user enters a service screen, to purchase cheques for example, visual consistency is greatly reduced. The screens within the Cheque Ordering section are consistent to each other, but are not consistent to the Online Banking interface, nor to the Royal Bank identity (Royal-OrderCheques-Welcome.jpg).

3.4 Clarity

I find the site to be very easy to use, despite a lack of consistency across major sections. I am not encouraged to explore the available options, but I am offered everything I need without unnecessary surfing.

3.5 Language

The terminology used appears obvious and to the point. I am familiar with all the terms used on the site, and I find them familiar with those I encountered on my bank statement and at the physical bank.

4.0 Graphical Assessment

4.1 Look & Feel

The look and feel of the entire site is consistent with the Royal Bank identity (Royal-Home.jpg). The consistency in look and feel falls short once the user reaches one of the sub-section of the Online Banking feature.

4.2 Imagery & Graphics

Very little imagery and graphics are used on the entire site. A few stock photographs decorate the site, and are used mostly in advertisements. They tend to be of business people, or business accessories such as briefcases. A few are meant as a metaphor for the easy-to-use, freeing features of the site (eg. father and son walking along a beach.) The graphics tend to be quite small, with very little detail.

Icons are used to direct the eye towards more important selections.

4.3 Tone

The Royal Bank identity has a corporate feel to it. The site is information based. The identity serves as a backdrop to the content rich interface.

The written tone tends to be to the point. Often existing terminology is used from within the banking environment to describe the site's features. The site is very text heavy, but the text is broken down to the bare essentials for communication.

4.4 Colors

The colors used in the site are those found within the Royal Bank identity: blue, navy blue and yellow. All links are in navy blue. The rollover link color is orange. All text and most of the headers are in black. Big graphical buttons are yellow with black type. A few background colors are used to separate columns of information – mostly blue, with yellow also used in a few instances.

4.5 Type

All text is sans-serif (Arial or Helvetica). A few of the ads for Royal Bank features are in a serif typeface (some sort of Garamond, I suspect) that is the same or very similar to the one found in the RBC logo. For the most part the designer of the site used multiple columns to divide the content. This also has the added benefit of controlling the line length. The top-level navigation found in the main site is hard to read, mostly due to the sans-serif, all caps typeface which has not been properly letter spaced.

5.0 Functionality

5.1 Tasks & Actions (what can the user “do”)

Online banking

- view account information
 - transfer funds
 - electronically pay bills to more than 4,000 companies
 - order cheques
 - view accounts from other institutions
 - copy to accounting software
 - receive billing and other documents
 - schedule automatic payments for recurring bills with the Memorized function
 - pay other RBC Royal Bank customers
 - view US and Canadian accounts on one page
 - check balances on RBC Royal Bank or Royal Trust accounts
 - review and print recent account entries for record keeping purposes
 - make payments or draw down on your Royal Credit Line
 - purchase additional non-registered GICs, change GIC maturity instructions or change interest disbursement account information
 - buy and sell non-registered Royal Mutual Funds
 - view RRSP details and make contributions to your existing RBC Royal Bank RRSP in RBC Royal Mutual Funds, Savings Deposits and GICs
-
- research and apply for loans
 - review details of your mortgage and skip or double-up mortgage
 - obtain balances, make payments or waive/delay payments on most loans
 - research interest rate information from within Online Banking
 - log into your Action Direct NetAction account to trade online
 - access your accounts at RBC Dominion Securities
 - access financial tools, calculators and product information
 - research other ways you can bank
 - get daily numbers: rates, economic updates

6.0 Technical assessment

6.1 Download Time

The site itself is very quick to load. However, during prime time the online banking section tends to slow down quite a bit because of its back-end database system.

6.2 Resolution

The site fits horizontally on an 800x600 pixels screen, but scrolls vertically.

6.3 Color Palette

The site conforms to the 256 color palette.

6.4 Plug-ins

The site does not require any additional plug-ins.

6.5 Restrictions (passwords, sign-ups)

You have to be a Royal Bank customer to use the online banking feature.

7.0 Personal reflections

7.1 Impressions and Observations (my gut feeling)

The site has been extremely useful to me. Before online banking, most of my bills were chronically late. Since online banking I am on time with my payments, and I am actually aware how much money I have on my account. I have a few payments automated (insurance and rent), but I don't yet feel comfortable enough to have everything automated. I regularly use the pay bills and transfer funds features.

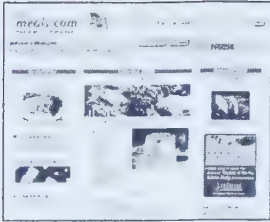
The online banking sign in page is easy to find. More recently the site has also been a lot faster to use. However, since I have a high-speed Internet connection, I am probably not the best judge of the speed of the site.

7.2 Links to Other Sites

- Bank of Montreal Online Banking
<https://www1.bmo.com/cgi-bin/netbnx/NBmain>
- Canada Trust (TD) Online Banking
<https://easyweb.tdcanadatrust.com/>
- Scotia Bank Online Banking
<http://www.scotiabank.com/>

MEALS.COM

Meals.com: <http://www.meals.com> “Meals.com” by Nestle, 22 June, 2003



1.0 Administrative

1.1 Image Keywords

Meals-Home.jpg; Meals-MyGroceryList.jpg; Meals-MyPlanningCenter.jpg;
Meals-RecipeCenter.jpg; Meals-Recipe.jpg; Meals-RecipeReview.jpg

1.2 Category

- Looking for information
- Using resources

1.3 Path

Previously known URL.

I use to work for the company who originally designed the site.

2.0 Type of Site

2.1 Target Audience

Women with families are the primary target audience for this site. This conclusion may be stereotypical, however, under the What Our Customers Say section eight out of ten comments are from women. Even if the statements are fabricated by the Meals.com staff, the choice of statements speaks to the potential target audience. A number of the statements also speak to how time-saving the site is for someone with a busy schedule. This suggests potential users who are either very busy stay-at-Home moms, or those who juggle work and family.

This recipe is great! It was so easy and delicious. I made one this weekend and my family had it gone right away. My husband especially loved it. I had some pumpkin left over so I made another one and took it to work where it was gone in about 15 minutes! Everyone raved about it and wanted the recipe. I gave it to them and let them know about your great site. Thanks again! I always find “winners” here. Patti, PA

Dear Meals.com, I LOVE this site! I have told everyone that I know about it! Sure, there are some recipes that our family has tried and not cared for, but the majority of them are excellent and I will just try new recipes as we get more involved with the site. Thank you soooooo very much for making this available to us -- the working moms of America and all of the others that don't have time to plan so they make it up on the drive Home from work. I love knowing what the week will hold, planning for leftovers for lunches, and getting all that I need one day of the week so that I don't spend more

than I need to spend. Once we do the weekly plan, I print out my shopping list and, then, compare the list of needs to the sale papers. I love going shopping and not being confused! Thank you again! You are the best thing since sliced bread! Ellen S.

I have found [Meals.com] to be a big help to me in planning meals for my family, making weekly meal plans, finding recipes, planning special occasions and storing my own recipes in the recipebox. Love the shopping list! I have only been using your site for a short time but after visiting other similar sites, I continue to return to Meals.com for most of my needs. Karen S., East Hartford, CT

2.2 Purpose

The site's tagline is: Meal Planning Made Easy. The purpose of the site is to offer a variety of meal recipes.

3.0 Content Assessment

3.1 Structure

The site's Home page is designed as a content sampler. The user is presented with an overview of the site's features and newest content that have been pulled from within the different sections of the site. The visitor is enticed by the Recipe of the Day, the Quick and Easy Meal of the Week, or the feature on Recipes for the Troops Abroad to continue exploring the rest of the site.

A regular user of the site can use the Home page as a jump point to view his or hers personalized content.

3.2 Hierarchy & Organization

(navigation – position, type, levels, consistency)

The site uses a global navigation bar that consists of utilities common to the entire site: Search, Sign In/Out, and Join Now. These are site utilities – they are not content holders; they allow the user to perform actions. The primary navigation, located across the top of the page, contains six items: Recipe Center, Suggested Meals, Features & Advice, Planning Center, Product Express, and Special Offers. Secondary navigation appears in a row, directly below the primary navigation bar, once the user has selected a primary nav item. Directly above the primary nav bar is a row of choices that I would term user preference navigation: My Grocery List, My Recipe Box, My Meal Plans, and My Preferences. Upon further inspection, I discovered that three out of four of these choices are actually the secondary nav, under Planning Center (the fourth, My Preferences, is a utility). The designers of the site might have thought so as well, since they pulled these choices into a more prominent position, on every page, above the

primary nav bar. These choices are different and should be treated differently. They offer the user personalized content, while the other choices do not. They are actually storage devices for content that the user has chosen to “save” for future viewing. These options function only once the user has signed up with Meals.com. His/her content is then attached to the sign in name, and appears each time the user signs into the site.

The Home page, as well as the majority of the primary and secondary site pages, is made up of in-page navigation – lists of items that you click to view the details. For example, under Features & Advice the user finds a list of items titled Condiments & Sauces. The user scans through the list, then clicks on one of the titles (Really Easy Relishes, for example) to view the recipe.

3.3 Consistency

The site is quite consistent. Its identity, the global nav, the primary nav, and the user preference nav appear on every page in exactly the same place and treatment (top third of a 800 x 600 screen). The content area of every page is divided into columns (from two to four). The first column repeats the Search function, with the rest of the space reserved for advertising. All buttons on the site are easy to distinguish from the content, and it is quite easy to figure out where you are within the site and how to get somewhere else. The site has an extremely large amount of content that is not organized into an obvious navigation system (mostly available through in page links). The “save” content features are a really good idea, since it would be quite easy to find a recipe, navigate some place else, and not be able to find it again.

3.4 Clarity

The designers of the site made its purpose very clear right from the Home page. The site name is clear and to the point, the tag line is short and provides a clear explanation, if one is needed, and the pictures of prepared food enforce the image of the type of content that is available on the site. The high level of consistency in the first third of each screen provides a clear sense of location both within the WWW and within Meals.com.

3.5 Language

The language is very approachable, consisting of terminology and sentence structure at a fairly basic reading level. The site is easy to scan – the majority of content is broken down into lists. Depending on their complexity, some recipes are quite content heavy and hard to scan. They might be easier to follow if they were broken down into steps and shorter paragraphs.

4.0 Graphical Assessment

4.1 Look & Feel

The terms that might best describe the look and feel of the site are earthy and Homey. This is demonstrated mostly though the choice of colors and imagery. The grid of the site, however, seems too organized and structured to be following these same visual goals. My feeling is that the colors and imagery of the site is meant to communicate warmth and approachability, while the structure of the site is meant to communicate ease of use, functionality, and time saving.

4.2 Imagery & Graphics

There are a lot of images of food on the site, illustrating either the theme of a particular section or the actual recipe. Additional images are of mothers and children in the kitchen. The photographs are screened with warm, semi-transparent gradients. These are decorative and mostly reserved for the Home page. The photographs of food are high quality, well cropped, and both informative and decorative.

4.3 Tone

The tone of the site is approachable and easy. It is warm yet competent. Again, I would say that the mixture of functionality through organization and approachability through the colors and imagery creates these impressions.

4.4 Colors

The site design is made up of earthy tones: yellows, reds, oranges, and browns. Green and red are used as accent colors. Yellows and oranges are used as background colors (mostly through gradients. Most of the clickable items and some of the headings are brown. The majority of the text is black.

4.5 Type

All navigation and text is in a sans-serif typeface, a mixture of Arial for HTML text and Futura? for the primary nav bar. Using Futura for the primary nav bar was not the best choice as it tends to look fuzzy on the screen at small point sizes. Arial was a standard, and appropriate, choice to use for the majority of the content. Major headings on the Home page are in a more decorative, italic serif typeface. This works quite well since these headings are quite large, look different from any other text on the page, thus allowing the user to identify the section headings and jump across the page from one to the next.

5.0 Functionality

5.1 Tasks & Actions (what can the user “do”)

- search for and view recipes
- with the click of one button, store the ingredients of a recipe into a named shopping list
- store favorite recipes for future viewing
- create and store meal plans
- change preferences
- read advice and articles on various cooking topics
- sign up to receive recipes through email
- learn about specific Nestle products
- sign up for product offers
- write recipe reviews

6.0 Technical assessment

6.1 Download Time

The site is quick to download. Aside from the Home page, the site uses mostly HTML text and color-filled table cells. There are few images and they are a worth while wait since they illustrate the recipes.

6.2 Resolution

The site fits horizontally on an 800x600 pixels screen, but scrolls vertically.

6.3 Color Palette

The site conforms to the 256 color palette.

6.4 Plug-ins

The site does not require any additional plug-ins.

6.5 Restrictions (passwords, sign-ups)

You can use the site without signing up, however, in order to access some of the more advanced, personalized features you have to provide your email address and a password. All services are free.

7.0 Personal reflections

7.1 Impressions and Observations (my gut feeling)

The functionality of the site could be extended further along its main theme. Overall, however, this site is both useful and usable. I have seen a number of sites with similar

content, and this one is by far the simplest to use, it is also provides the largest amount of content.

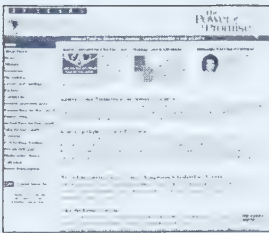
7.2 Links to Other Sites

- Meals for You
<http://www.mealsforyou.com/>
- My Meals
<http://www.mymeals.com/>

KOMEN.ORG

Komen.org: <http://www.komen.org> “The Susan Komen Breast Cancer Foundation”
by The Susan Komen Breast Cancer Foundation, 05 November, 2002.

(sponsored by Lee)



1.0 Administrative

1.1 Image Keywords

komenorg-Home.jpg; komenorg-BreastExam.jpg;
komenorg-MultimediaLibrary.jpg; komenorg-Survivors.jpg;
komenorg-TalkBackMessage.jpg; komenorg-TalkBackHome.jpg;
komenorg-TalkBackWebForum.jpg; komenorg-Facts.jpg

1.2 Category

- Looking for Information
- Using Resources
- Building Communities

1.3 Path

Google Keywords: breast cancer

2.0 Type of Site

2.1 Target Audience

This site is specifically geared towards women who have been diagnosed with breast cancer. The secondary target audiences are the families of women who have been diagnosed with breast cancer: husbands, children, parents, siblings, and friends. The tertiary target audience are the people who have dedicated their lives to fighting breast cancer and survivors of breast cancer (often individuals are in both groups.) Due to the nature of the illness, the audience is mostly female, age thirty and up. The language

used to write the copy and the navigation items on the site suggest that it is geared for women who have high school, and at least some college education.

2.2 Purpose

The site has at least four levels of purpose:

- to raise funds for cancer research;
- to provide information about breast cancer, breast cancer treatments, etc.;
- to promote early detection;
- to provide support to breast cancer patients and their families.

3.0 Content Assessment

3.1 Structure

The focus of the site seems to be primarily on research and funding: the Home page contains three news items relating to donations, three items relating to research, and one educational item.

The site is divided into two primary columns. The left column contains navigation that is consistent across all of the pages. The right column contains content. This column is sometimes sub-divided into two or three additional columns.

3.2 Hierarchy & Organization

(navigation – position, type, levels, consistency)

The primary navigation is sub-divided by color into three sections. The three divisions seem to be loosely theme-based. The blue section includes links that have to do with the various ways that you can become monetarily involved with Komen, as well as links to reasons for doing so. The pink section contains links to Komen affiliate sites, as well as its Public Policy. The green section contains links that facilitate visitor involvement with the site and with each other.

Blue: About Komen; News; Affiliates; Donations; Marketplace; Grants and Funding; Partners; Contact Us

Pink: BreastCancerInfo.com; Komen Race for the Cure; Public Policy; Virtual Race for the Cure; Sing for the Cure

Green: Calendar; Celebrating Survivors; Breast Self Exam; Multimedia Library; Talk Back; News Subscription

Any additional navigation appears as text links above and within the text, as well as in a narrow column on the right hand side. Sixteen of the primary navigation items are repeated (and a few are added) as text links at the bottom of each screen.

The primary navigation appears very crowded. This is partly due to the amount of items (nineteen in total), and partly to the amount of words used in some of the items (up to five in some cases.) This is a large number of items to digest at a glance, and the task, at times, is quite overwhelming.

The secondary navigation, appearing as text links, is not consistent, hard to scan, and often hard to find.

The news content on the Home page does not appear to have any obvious hierarchy. Perhaps it is date-based, with the newest news items appearing on top. However, that is impossible to tell for sure since there are no dates associated with the entries.

3.3 Consistency

The site is very consistent in its identity. The logo, tag line, and primary navigation are located in the same place and in the same treatment on all of the pages. The treatment of the content, however, including the secondary navigation, is quite inconsistent. Links appear in different places, colors, and treatments. Sometimes they appear in a sans-serif typeface, and sometimes in a serif typeface. Overall, however, the site maintains a consistent look on all of its pages.

3.4 Clarity

I feel that the designers of Komen.org could have created a clearer structure to the site. The user should be presented with three very clear choices on the Home page, with the rest of the content sub-divided into further levels of navigation. The primary and secondary navigation for the entire site does not need to appear on every page. The appropriate secondary navigation should only appear when the user is in that particular section. Some of the navigation is unnecessarily repeated, creating a sense of confusion as to whether the links direct you to them same or to a different place.

The designers should have created a consistent location on the page and treatment for the primary, secondary, and tertiary navigation.

The names on some of the links should be shorter and more to the point so that the user has an easier time scanning the links and understanding where they lead.

3.5 Language

The language used appears to be more advanced than general reading (a more careful analysis of the reading level is required). The type of language that is used in the content appears to be very consistent.

4.0 Graphical Assessment

4.1 Look & Feel

Overall, the site does not appear overly friendly because of the large and overwhelming amount of data compacted into a very tight space. It has more of a feel for “authority” than it does for “empathy” or “humanness.” This is mostly due to the use of language that steers towards the technical or scientific, rather than a tone that is more journalistic. Even though the site uses colors that typically appear quite warm (pink and purple), because of their saturation, and combination with blue and grey, they appear quite cool and clinical. They remind me of the colors that are used to paint hospital walls.

4.2 Imagery & Graphics

Photographs are not used to create any kind of mood for the site. Only small photos are used as information graphics to help illustrate content found in the body copy. These have very little consistency in type or treatment. Small illustrations are used with similar purpose on a few of the pages.

4.3 Tone

The tone of the site is professional and clinical, with a sense of authority communicated through the choice of language and color palette.

4.4 Colors

The main colors that are used in the site are: pink, two shades of grey, and four shades of purple. The colors make the site appear feminine (due to the excessive use of pink and purple); however, the specific choice of color shades overrides the sense of the feminine with an image of a clinic or institution.

4.5 Type

Two typefaces are used: serif (Times New Roman), and sans-serif (Arial) – bold, regular, and italic. The serif type is used for body copy, headings, and text links. The sans-serif type is used for the primary navigation bar. Some image headings use a sans-serif typeface. The logo is an unidentified serif typeface. The choice of serif and sans-serif type needs to be more consistent. For example, since the primary navigation bar

is created using sans-serif type and the since the body copy is created using sans-serif type, it would be more consistent to use a sans-serif typeface for all other links.

The site appears fairly text heavy, with informational graphics used only occasionally to complement the text. The line length of the body copy is too long for comfortable on-screen reading.

5.0 Functionality

5.1 Tasks & Actions (what can the user “do”)

- read news
- donate online
- find affiliates by state
- order products online
- contact through a fill-out form
- search an A to Z guide for information about breast cancer
- take a quiz
- join a virtual race
- look for an event by state, year, month, etc.
- read survivor stories
- watch a video on how to perform a breast self exam
- watch educational videos found in the multimedia library
- read and post survivors’ stories
- read and post family and friends’ stories
- read and post thoughts about participating in a Race for the Cure
- read and post what you are doing to raise awareness or funds
- subscribe to a newsletter

6.0 Technical assessment

6.1 Download Time

Download was only tested on a DSL line and worked well.

6.2 Resolution

The site fits horizontally on an 800x600 pixels screen, but scrolls vertically.

6.3 Color Palette

The site does not conform to the 256 color palette. The blue, pink and grey colors blend into one tone of grey in the primary navigation when viewed in 256 colors.

6.4 Plug-ins

QuickTime plug-in was required to view instructional videos. These QuickTime movies were a bit slow, and some contained errors.

6.5 Restrictions (passwords, sign-ups)

No passwords or sign-ins were encountered that restricted access to information or the reading or posting of messages.

7.0 Personal reflections

7.1 Impressions and Observations (my gut feeling)

This site contains a lot of content. Information and resources were a bit hard to find since the focus was placed primarily on funding. The look-and-feel of the site appeared very research and funding based, not human-support based.

The site was quite overwhelming in its presentation of information – too much of it was presented in a very tight space. Finding the same item twice was made more difficult by a lack of a consistent secondary navigation.

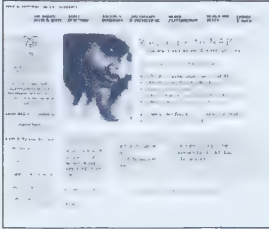
The fact that you could post and read messages without signing up for anything was very convenient and took very little time.

7.2 Links to Other Sites

- Y-me National Breast Cancer Organization
<http://www.y-me.org/>
- National Alliance of Breast Cancer Organizations
<http://www.nabco.org/>
- Breast Cancer Fund
<http://www.breastcancerfund.org/>
- The Breast Cancer Research Foundation
<http://www.bcrfcure.org/>
- Canadian Breast Cancer Foundation
<http://www.cbcbf.org/>

NABCO.ORG

NABCO.org: <http://www.nabco.org> “National Alliance of Breast Cancer Organizations.” by National Alliance of Breast Cancer Organizations, November 24, 2002



1.0 Administrative

1.1 Image Keywords

nabco-Home.jpg; nabco-Article.jpg; nabco-FindingSupport.jpg

1.2 Category

- Looking for Information
- Using Resources
- Building Communities

1.3 Path

Google Keywords: breast cancer

2.0 Type of Site

2.1 Target Audience

The primary target audience is made up of women, age 30 to 55, who have been diagnosed with breast cancer. The secondary target audience is made up of friends and family members of women who have been diagnosed with breast cancer. The tertiary target audience group is made up of people who are interested in breast cancer research and funding (this group is also, to some extent, made up of breast cancer survivors.)

2.2 Purpose

Founded in 1986, NABCO is the leading non-profit information and education resource on breast cancer in the US. Its aim is to educate the public and offer information, resources and referrals to patients, survivors, and their families, medical professionals and their organizations, and the media. All services are free of charge. (taken from the NABCO mission statement.)

3.0 Content Assessment

3.1 Structure

The site seems to be heavily focused on emotional support and education. The top level navigation bar consists of four items that pertain to education: Facts and Stats, Early Detection, Within Our Reach, and Recurrence & Advanced Breast Cancer. Two

other items in the navigation bar pertain to support: Recently Diagnosed, and Family & Friends; while the final item pertains to research: NABCO Partnerships.

Within the content area of the Home page, five items pertain to education: NABCO News, Breast Cancer Risk Factors Fact Sheet, Take Charge of Your Breast Health Brochure, NABCO Breast Cancer Resource Card, and NABCO's Comments on Hormone Replacement Therapy; while one item pertains to research: Grant Information.

In the left hand navigation bar, nine items pertain to support: Top Resources, Support Groups, NABCO Email Remainder, NABCO Publications, NABCO Online Calendar, BookSpot, NABCO News, Post Office, and My Library.

3.2 Hierarchy & Organization

(navigation – position, type, levels, consistency)

Navigation constitutes a large percentage of every page. There are seven items in the primary navigation bar that is positioned across the top of each page. The sub-navigation bar appears only once, in a row below the primary navigation. It is found under the Recurrence & Advanced Breast Cancer section, and has six sub-sections.

Yet another grouping of navigation can be found running along the left hand side of every page. This navigation has nine items. Additional navigation appears as text links above the text and within the text, as well as in a column on the right hand side. Sixteen of the primary navigation items are repeated (and a few are added) as text links, at the bottom of every screen.

Some of the primary navigation items are quite long, consisting of up to five words, while some of the secondary navigation items are even longer, consisting of up to seven words. Five out of nine items on the left hand side nav are illustrated with icons. The items in the left hand navigation bar include descriptions explaining the meaning of the links, for example: the NABCO Publications link has the tagline View and Order Online located below it.

Overall, the navigation appears quite crowded, with many linked items and little white space. There is no clear sense of hierarchy, since numerous items appear to be on the level of primary navigation even though they have different graphical treatments and positions on the page.

3.3 Consistency

The site is very consistent. Its look-and-feel remains the same on every page, as does its identity, tone, and navigation. Even the mood portrayed in the photographs is consistent.

3.4 Clarity

The purpose and direction of the site is clear from page to page. However, the main down side of the site is not the content; rather it is in the organization of that content. The structure of the site is hard to follow. There are too many navigational items that have not been grouped into coherent sub-categories.

3.5 Language

The body copy that is used in the site is divided into short, digestible chunks of under fifteen words each. The educational articles tend to be under 1,000 words. They tend to include a lot of bulleted items that break up the content. The tone of the articles tends to be supportive, caring, encouraging, and empowering. Content appears to be consistent in its type of language and tone used.

4.0 Graphical Assessment

4.1 Look & Feel

Overall, the site appears friendlier than www.komen.org. The data is presented in a more modern, structured way. Background, colored, shapes are used to accentuate certain sections of the page. These round shapes direct the eye, allowing important items to come forward, while less critical ones are pulled back.

Through the use of beautiful photography and a warm color palette, the site welcomes the visitor, encouraging him or her to explore it further.

4.2 Imagery & Graphics

The site appears well balanced between informative text, navigation, and decorative elements, with photographs used, when appropriate, to decorate the text.

Photographs are used to create a very humane mood for the site. Images of women, in the target age group, are used. These women tend to be thoughtful, intelligent, and welcoming. The photographs are quite large, and closely cropped on the faces of women. They are either grayscale or duotone.

4.3 Tone

The site is still quite authoritative because of the sheer amount of information that is presented, but it also manages to convey a sense of “empathy” and “humanity.”

4.4 Colors

The color palette used includes pink, yellow, green, very light mocha, and brown. These colors give the site a stereotypically feminine tone.

4.5 Type

Two types of typefaces are used: serif and sans-serif. All body copy is in a serif typeface (Times or Times New Roman), while all links are in a sans-serif typeface (Arial or Helvetica.) A script face is used for decorative quotes.

5.0 Functionality

5.1 Tasks & Actions (what can the user “do”)

- search a library of written resources
- search for support groups based on location
- sign-up for an e-mail reminder (for breast exams)
- view NABCO publications in pdf format
- search for events in an online calendar
- submit your own events to the calendar
- order books
- e-mail cards to friends
- save info to My Library

6.0 Technical assessment

6.1 Download Time

Download was only tested on a DSL line and worked well.

6.2 Resolution

The site fits horizontally on an 800x600 pixels screen, but scrolls vertically.

6.3 Color Palette

The site conforms to the 256 color palette.

6.4 Plug-ins

The site does not require any additional plug-ins.

6.5 Restrictions (passwords, sign-ups)

An optional sign-in is present, without an explanation of what the user receives upon sign-up.

7.0 Personal reflections

7.1 Impressions and Observations (my gut feeling)

This site contains a lot of content. Due to the sheer volume of information, and its poor organizational structure, the site is quite overwhelming – too much information presented in a very tight space. Not very much white space was used to break apart the information. Also, the site could benefit from a good technical writer that would shorten up all copy.

The tone of the site is very approachable and down to earth. The images create an impact on an emotional level since they put a human face to the issue.

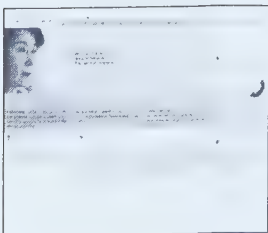
Finding the same item twice was made more difficult by a lack of a consistent secondary navigation. Too many links were embedded in the text, suggesting a lack of flexibility and organization in the original site plan.

7.2 Links to Other Sites

- Y-me National Breast Cancer Organization
<http://www.y-me.org/>
- Susan Komen Breast Cancer Foundation
<http://www.komen.org/>
- Breast Cancer Fund
<http://www.breastcancerfund.org/>
- The Breast Cancer Research Foundation
<http://www.bcrfcure.org/>
- Canadian Breast Cancer Foundation
<http://www.cbcf.org/>

Y-ME.ORG

Y-ME.org: <http://www.y-me.org> “Y-ME National Breast Cancer Organization.” by Y-ME National Breast Cancer Organization, November 24, 2002



1.0 Administrative

1.1 Image Keywords

y-me-Home.jpg; y-me-JustBeenDiagnosed.jpg; y-me-FeatureArticle.jpg;
y-me-ContactUs.jpg

1.2 Category

- Looking for Information

- Using Resources
- Building Communities

1.3 Path

Google Keywords: breast cancer

2.0 Type of Site

2.1 Target Audience

The primary target audience is sub-divided into three, very clear groups:

- those who have recently been diagnosed with breast cancer;
- those looking for support and services;
- and those searching for breast cancer information.

The first two sub-groups are most likely made up of women, age 30 to 55. The first sub-group consists of women who have been recently diagnosed, while the second sub-group may encompass those with recent diagnosis, survivors, friends and families of women with breast cancer, caregivers, and others.

The secondary target audience group includes individuals who want to give a monetary contribution to the organization.

2.2 Purpose

The mission of Y-ME National Breast Cancer Organization is to decrease the impact of breast cancer, create and increase breast cancer awareness, and ensure, through information, empowerment and peer support, that no one faces breast cancer alone (taken from the Y-me mission statement.)

3.0 Content Assessment

3.1 Structure

The Y-me site is divided into three main sections: I've just been diagnosed with breast cancer; I'm looking for support and services; and I'm searching for breast cancer information. These three links lead to three separate sections of the site.

I've just been diagnosed with breast cancer – explains treatment options and their potential side effects. Teaches you how to talk with friends and family and manage your day to day living.

I'm looking for support and services – gives access to free support programs and services for patients, family, friends, and caregivers.

I'm searching for breast cancer information – explains the different types of breast cancer, recommended early detection methods, and the purpose of clinical trials. Also offers access to online publications.

3.2 Hierarchy & Organization

(navigation – position, type, levels, consistency)

The three main buttons described above, are the primary navigation items for the site. The Home page also includes a global navigation bar that is located in a row at the top of every page. It includes such items as: Home; Resources; About Y-ME; Contact Us; Search; and Y-ME RACE Against Breast Cancer. It also includes three additional items that are graphically separated from the global navigation, but are located on every page, directly above the global nav: Media Room; Local Affiliates; and Ways to Give.

On subsequent pages, the three primary navigation items are re-located above the global navigation bar; while the three additional items that were there previously, are re-located to be a part of the global navigation bar.

Secondary navigation items appear in the body of the page, once the user has selected one of the primary items. Tertiary items also appear in the body of the page (replacing the secondary items) once the user has selected a secondary item (see yme-JustBeenDiagnosed.jpg). Since the secondary navigation does not remain consistently on the page, but is instead replaced by content, the user has to use the Back button to go back and select another menu choice. The same is true once the user has selected one of the tertiary items.

The Home page also includes a variety of additional links, some that are part of the original site design, and some that have been added subsequently, and that change on a regular basis. This adds an unnecessary sense of clutter to a site that, otherwise, is very well structured and organized. The site administrators continually add links to the bottom of the page, in a format that does not conform to the structure of the rest of the site.

3.3 Consistency

The site is very consistent up to the third level of site hierarchy. At that point the system falls apart. The structure of the page changes – new navigation items are added while others are moved from the right to the left column. The image treatment changes as well. The photographs become much smaller, and are now surrounded by small paragraphs of text instead of thick purple backgrounds. This change is quite

visually drastic. The large images with the purple bars are such a significant part of the site's identity, that once they are removed, the pages look like they belong to an entirely different Web site.

3.4 Clarity

The site uses a very straight forward structure. It is the only site that I reviewed that seems to be using the type of language that would be familiar to the target audience. The three primary menu choices sound as if they have been taken directly from women speaking about their experiences. This approach provides a sense of purpose to the site.

The site's navigation, so clear on the Home page, begins to disintegrate once the user moves deeper into the site. Navigation is not consistently maintained on subsequent pages. Items are moved, removed, and restructured. This confuses any sense of place that the user may have. It also makes it very hard to remember, hence recreate, your movement through the site.

3.5 Language

Most of the navigation items are constructed from words and phrases that seem to be taken from the user's everyday language. Phrases such as: Your Breast Health; Day to Day Living; and When the Woman You Love Has Breast Cancer are welcoming and approachable.

The body copy uses similar type of language. This is its strength. Its weakness, however, is the extremely long line length that has been used when formatting the text. The text was also not written with reading-on-the-Web in mind. Articles are very long, without pull quotes, bulleted lists, or other devices that break up the text.

4.0 Graphical Assessment

4.1 Look & Feel

The site is very warm and welcoming, while maintaining a sense of trust and professionalism. This is mostly due to the choice of colors and photography, and use of white space. Its clean and open structure, and use of large, open sans-serif type, gives it a modern look.

4.2 Imagery & Graphics

Large photographs of women within the target age group decorate the site. These are professional and very well cropped for the Web. The Home page and all of the

secondary pages use a different photograph. Graphics are used as icons to direct the eye to the more critical items. This is done in a consistent and uncluttered manner.

4.3 Tone

The site speaks in a professional and authoritative manner, while maintaining a sense of warmth and welcome. Through the photographs the user catches a glimpse of the human face of this illness. The photographs make navigating through the site a touching experience.

4.4 Colors

The color palette used in the site design consists of shades of purple, pink, and black. Pink is used for in page links, black for the copy, and purple for all graphics, key lines, and backgrounds. The color palette is consistent, clean, and interesting.

4.5 Type

Only sans-serif type is used in the site. This makes the site appear clean and very legible. The line-length that has been used in the articles should be cut in half to make reading a lot easier. The type hierarchy in the body copy is very clear and consistent across the pages.

5.0 Functionality

5.1 Tasks & Actions (what can the user “do”)

- submit breast cancer and breast health questions to be answered by a trained breast cancer survivor
- join a mailing list
- participate in a weekly pool
- donate funds
- view movies
- search a library of written resources
- search for support groups based on location

6.0 Technical assessment

6.1 Download Time

Download was only tested on a DSL line and worked well.

6.2 Resolution

The site fits horizontally on an 800x600 pixels screen, but scrolls vertically. It stretches to fit larger screens.

6.3 Color Palette

The site conforms to the 256 color palette.

6.4 Plug-ins

The site uses Windows Media Player to play its movies. A media selection process is not available when choosing to view the movie.

6.5 Restrictions (passwords, sign-ups)

The site does not have any restrictions, and sign-ups are not required. The only potentially frustrating aspect of the site is its 1-800 hotline. A number of features are only available through the hotline, not online.

7.0 Personal reflections

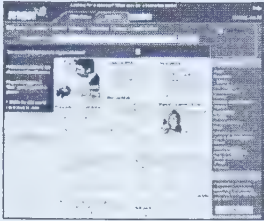
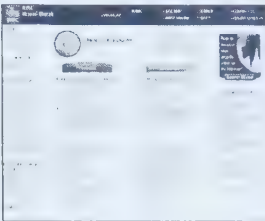
7.1 Impressions and Observations (my gut feeling)

From all of the breast cancer Web sites that I reviewed, this one is the most impressive. It is well designed – clean in its page structure, clear in its language, and moving in its use of photography. The only down side to the site is its lack of consistency in navigation. Primary, secondary, and even tertiary navigation items should have a consistent place and treatment across all the pages. Also, the large photographs that are so critical in the site's identity, should be consistently maintained across all of the pages.

7.2 Links to Other Sites

- National Alliance of Breast Cancer Organizations
<http://www.nabco.org/>
- Susan Komen Breast Cancer Foundation
<http://www.komen.org/>
- Breast Cancer Fund
<http://www.breastcancerfund.org/>
- The Breast Cancer Research Foundation
<http://www.bcrfcure.org/>
- Canadian Breast Cancer Foundation
<http://www.cbcbf.org/>

C: WEB SITE CRITIQUES: SUMMARY OF FINDINGS FOR GENERAL SITES

	Msn.com <i>http://www.msn.com</i>	Meals.com <i>http://www.meals.com</i>	Royal Bank <i>http://www.royalbank.com</i>
			
Category	Looking for information Using resources Building communities	Looking for information Using resources	Using resources
Target audience	Quite wide: focus on middle to upper class professionals, with some college education	Women with families	RBC customers Both business and regular customers
Purpose	Providing users with wide assortment of regularly updated links and info	Providing a variety of meal recipes	Providing a more convenient way to manage your finances
CONTENT ASSESSMENT			
Structure	The Home page acts as a jumping off point to the rest of the site that is sub-divided according to broad topic areas It is a content sampler	The Home pages acts as a jumping off point to the rest of the site It is a content sampler	Online Banking is a sub-section off the main Royal Bank Web site Contains a sign-up and login process
Hierarchy & organization	Almost all of msn.com is nav Uses tabbed, right and left-hand nav, and in-text nav Page is sub-divided into 3 columns	Uses a global nav consisting of utilities common to the entire site, primary nav with 6 items, secondary nav, user preference nav, and in-text nav Page is sub-divided into 3 columns	Most of the navigation happens linearly Approximately half of the items on each page are links Page is sub-divided into 3 columns
Consistency	Quite consistent in look and feel, typography, identity, and content	Quite consistent overall	Once you are logged in, the content changes to reflect your personal information Consistent in the primary screens, but very inconsistent in service screens

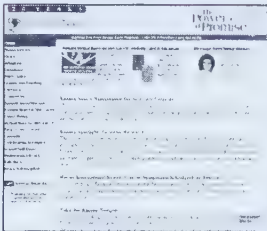
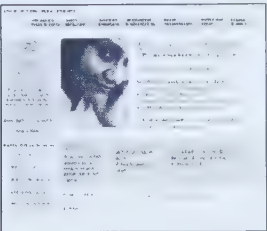
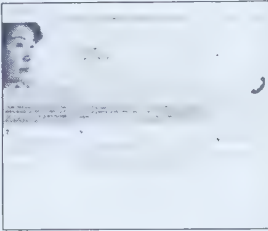
C: Web site critiques

	Msn.com <i>http://www.msn.com</i>	Meals.com <i>http://www.meals.com</i>	Royal Bank <i>http://www.royalbank.com</i>
Clarity	Lack of clarity in site structure. Repetition in navigation elements Visual clutter	Clear and to the point	Even though it's inconsistent across some screens, the site is very easy to use
Language	Most pages consist of short sentences or chunks of sentences that act as teasers and links to full content	Very approachable with a fairly basic reading level Easy to scan, except for the recipes, some of which are quite long and lack hierarchy	Obvious and to the point Similar to terms used in the physical bank and on the printed bank statement
GRAPHICAL ASSESSMENT			
Look & feel	Cool, professional, yet fun An adult persona	Earthy and homey Colors and imagery meant to communicate warmth and approachability, while structure is meant to communicate ease of use, functionality, and time saving	Consistent with the Royal Bank identity
Imagery & graphics	Tend to serve only one function: to decorate or supplement the adjacent features Tend to be small in size, with little consistency in image treatment	Images of food, either illustrating the theme of a section or the particular recipe Images of mothers and children, screened with a semi-transparent gradient High quality, well cropped, informative and decorative	Very few images Few stock photographs used as a metaphor for the site's freeing nature Icons used to direct user's eye to key items
Tone	Professional and easy; warm yet competent; functional and approachable	Approachable and easy; warm yet competent	Corporate
Colors	Shades of navy blue on the Home page Color palette changes according to channel	Yellows, reds, oranges, greens and browns	Those found in the Royal Bank identity: blue, navy blue, and yellow
Type	Arial	Arial and Futura	Arial

	Msn.com <i>http://www.msn.com</i>	Meals.com <i>http://www.meals.com</i>	Royal Bank <i>http://www.royalbank.com</i>
FUNCTIONALITY			
Tasks & actions	Tasks fall under the broad categories of: shopping, communicating, searching, playing games, customizing the interface, sending cards, and posting photos	Tasks fall under the broad categories of: searching, storing, personalizing, and communicating	Tasks have to do with banking and account management
TECHNICAL ASSESSMENT			
Download time	Fast download	Fast download	Fast download
Resolution	Fits horizontally on an 800x600 pixel screen with vertical scrolling	Fits horizontally on an 800x600 pixel screen with vertical scrolling	Fits horizontally on an 800x600 pixel screen with vertical scrolling
Color palette	Conforms to the 256-color palette	Conforms to the 256-color palette	Conforms to the 256-color palette
Plug-ins			
Restrictions	Sign-up required for some advanced, personalized features All basic services are free	Sign-up required for personalized features All services are free	Sign-up required to use banking features
PERSONAL REFLECTIONS			
Impressions	A very large site that is quite functional for general browsing, but not when searching for specific content	Both useful and usable Could provide additional functionality	Extremely useful
Similar sites	Yahoo.com <i>http://www.yahoo.com</i> Netscape.com <i>http://www.netscape.com</i> AOL <i>http://www.aol.com</i>	Meals for You <i>http://www.mealsforyou.com</i> My Meals <i>http://www.mymeals.com</i>	Bank of Montreal <i>https://www1.bmo.com</i> Canada Trust (TD) <i>https://easyweb.tdcanadatrust.com</i> Scotia Bank <i>http://www.scotiabank.com</i>

C: WEB SITE CRITIQUES: SUMMARY OF FINDINGS

FOR BREAST CANCER INFORMATION SITES

	Susan Komen Breast Cancer Foundation http://www.komen.org	National Alliance of Breast Cancer Organizations http://www.nabco.org	Y-ME National Breast Cancer Organization http://www.y-me.org
			
Category	Looking for information Using resources Building communities	Looking for information Using resources Building communities	Looking for information Using resources Building communities
Target audience	Primary – women who have been diagnosed with BC Secondary – families of women who have been diagnosed with BC	Primary – women who have been diagnosed with BC Secondary – families of women who have been diagnosed with BC	Primary target audience is sub-divided into 3, very clear groups: - those recently diagnosed with BC - those looking for support and services - those searching for BC info
Purpose	To raise funds for cancer research To provide BC info To promote early detection To provide support to cancer patients and their families	To educate the public Offer information, resources, and referrals to patients, survivors, and their families, medical professionals and their organizations, and the media	Decrease the impact of BC, create and increase BC awareness, and provide support These links to 3 separate sections of the site
CONTENT ASSESSMENT			
Structure	The focus of the site is on research, education and funding	The site is focused on emotional support and education	Divided into 3 main sections: - I've just been diagnosed - I'm looking for support and service - I'm searching for BC info

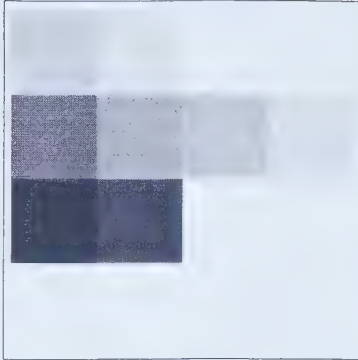
	Susan Komen Breast Cancer Foundation <i>http://www.komen.org</i>	National Alliance of Breast Cancer Organizations <i>http://www.nabco.org</i>	Y-ME National Breast Cancer Organization <i>http://www.y-me.org</i>
Hierarchy & organization	Primary nav is sub-divided by color into 3 sections that are loosely theme-based Also uses in-text links Each page is divided into 2 columns: left for nav, right for content	Navigation constitutes a large percentage of every page Some navigation items are quite wordy (up to 5 words); some include a brief description below the link Overall, navigation appears quite crowded, with little sense of hierarchy	The 3 main buttons are the primary nav Home page also includes a global nav of resources Navigation does not remain consistent Home page includes a lot of additional links that aren't well organized
Consistency	Quite consistent in identity The treatment of the content is quite inconsistent	Quite consistent: look and feel remains the same on every page, as does the identity, tone, and nav	The site is fairly consistent up to the 3rd level, then the system disintegrates Image treatment changes The changes are noticeable
Clarity	The site lacks clarity in structure The site needs a clearer division of content, and fewer choices at every level Link names need to be shorter	The purpose of the site is very clear on every page. The main downside of the site is not its content but the organization of its content – there are too many navigational items	Uses a very straightforward approach – this provides a sense of purpose to the site Sense of clarity is completely lost once the navigation system begins to disintegrate
Language	Appears more advanced than general reading, but very consistent	Body copy is divided into short, digestible chunks of under 15 words each Includes a lot of bulleted lists Tone of the content tends to be supportive, caring, encouraging, and empowering	Language of the nav items and the copy seems to be taken from the users' everyday language – quite approachable Articles are very long and not formatted for the Web

	Susan Komen Breast Cancer Foundation <i>http://www.komen.org</i>	National Alliance of Breast Cancer Organizations <i>http://www.nabco.org</i>	Y-ME National Breast Cancer Organization <i>http://www.y-me.org</i>
GRAPHICAL ASSESSMENT			
Look & feel	Authority, rather than empathy or humanness Cool and clinical	Quite a bit friendlier than Komen.org Data is presented in a very structured manner Background, colored shapes are used to accentuate certain sections of a page The site appears very welcoming	Very warm and welcoming Trustworthy and professional
Imagery & graphics	Small photos used as information graphics Small illustrations, with a similar purpose, also used on a few pages Very little consistency in image type or treatment	Photos used to create a very human mood for the site: images of women in the target age group The women tend to look thoughtful, intelligent, and welcoming Photos are quite large, in greyscale or duotone	Large photos of women within the target age group Well cropped and professional Graphical icons are used to direct the eye
Tone	Professional and clinical, with a sense of authority	Sense of authority, empathy, and humanity	Professional and authoritative Warm and welcoming
Colors	Pink, two shades of grey, and four shades of purple	Pink, yellow, green, very light mocha, brown Give it a stereotypically feminine tone	Shades of pink, purple, black Clean and interesting
Type	Times New Roman and Arial	Times New Roman, Arial and Script face (used for quotes)	Arial
FUNCTIONALITY			
Tasks & actions	- donate - order products - take a quiz - join a virtual race - read and post survivors' stories	- search for support groups - submit events to a calendar - order books - email cards - save info to My Library	- submit BC questions - join a mailing list - join a weekly pool - donate - search for support groups

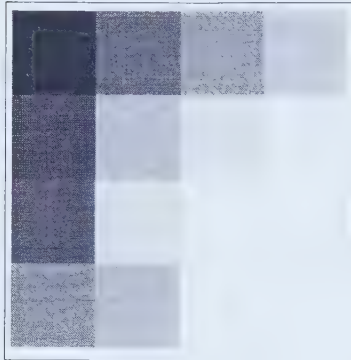
	Susan Komen Breast Cancer Foundation http://www.komen.org	National Alliance of Breast Cancer Organizations http://www.nabco.org	Y-ME National Breast Cancer Organization http://www.y-me.org
TECHNICAL ASSESSMENT			
Download time	Fast download	Fast download	Fast download
Resolution	Fits horizontally on an 800x600 pixel screen with vertical scrolling	Fits horizontally on an 800x600 pixel screen with vertical scrolling	Fits horizontally on an 800x600 pixel screen with vertical scrolling Stretches to fit larger screens
Color palette	Does not conform to the 256-color palette	Conforms to the 256-color palette	Conforms to the 256-color palette
Plug-ins	QuickTime to view videos		Windows Media Player to view videos
Restrictions		Sign-in was present No explanation of the benefits	A number of the features are only available through a 1-800 number
PERSONAL REFLECTIONS			
Impressions	Contains a lot of content Content is hard to find The look-and-feel appears research- and funding-based Quite overwhelming	Contains a lot of content that is quite poorly organized Not enough white space The tone is very approachable and down to earth. The images create an impact on an emotional level	This site is the most impressive from all that I viewed It is well designed - clean, clear, and emotionally moving The downside is a complete lack of consistency in navigation and image choice
Similar sites	Y-me.org http://www.y-me.org National Alliance of Breast Cancer Organizations http://www.breastcancerfund.org The Breast Cancer Research Foundation http://www.bcf cure.org Canadian Breast Cancer Foundation http://www.cbcbf.org	Y-me.org http://www.y-me.org Susan Komen Breast Cancer Foundation http://www.komen.org The Breast Cancer Research Foundation http://www.bcf cure.org Canadian Breast Cancer Foundation http://www.cbcbf.org	Susan Komen Breast Cancer Foundation http://www.komen.org National Alliance of Breast Cancer Organizations http://www.breastcancerfund.org The Breast Cancer Research Foundation http://www.bcf cure.org Canadian Breast Cancer Foundation http://www.cbcbf.org

C: WEB SITE CRITIQUES: COLOR CHARTS
FOR BREAST CANCER INFORMATION SITES

American Breast Cancer Society



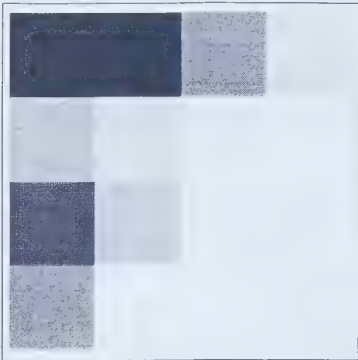
Avon Breast Cancer Crusade



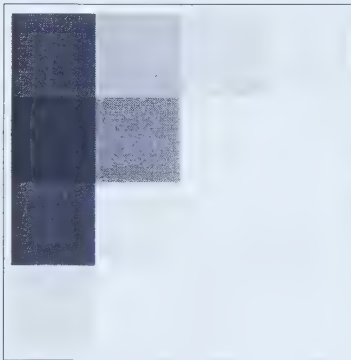
BreastBiopsy.com



Breast Cancer Fund



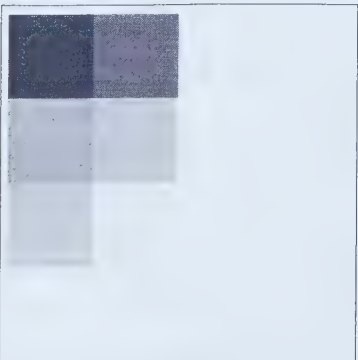
Breast Cancer Site



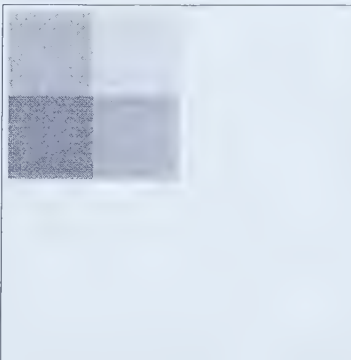
Canadian Breast Cancer Fund



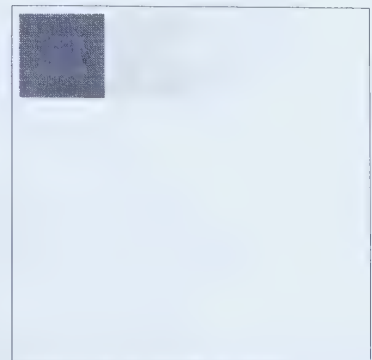
Cancer Gov.



NABCO



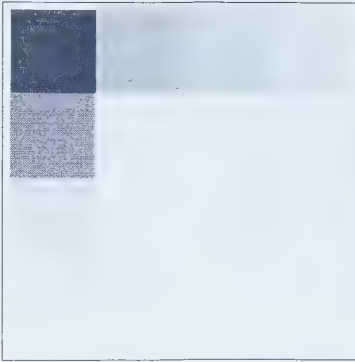
National Breast Cancer Fund



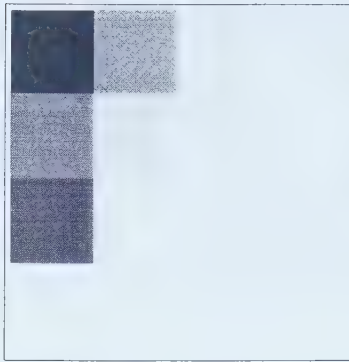
C: WEB SITE CRITIQUES: COLOR CHARTS

FOR BREAST CANCER INFORMATION SITES & HEALTH PORTAL SITES

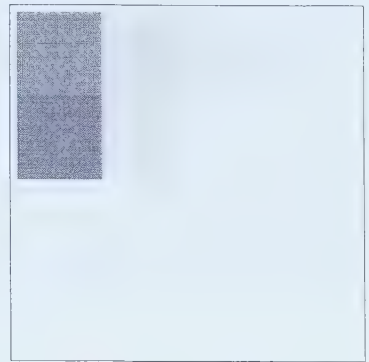
Y-ME



Susan Komen Foundation



Imaginis



MSN Health



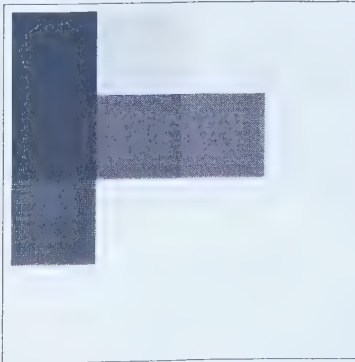
iVillage



WebMD



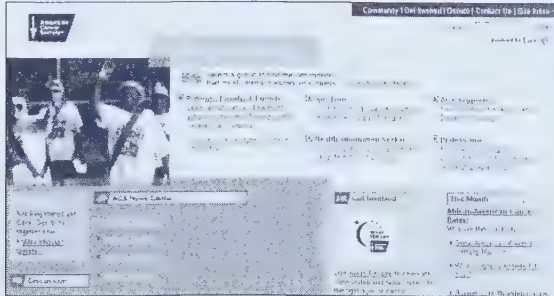
Mayo Clinic



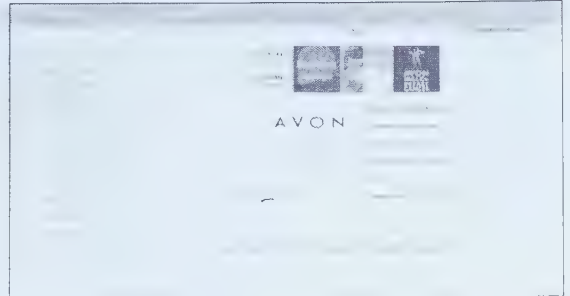
C: Web site critiques

C: WEB SITE CRITIQUES: SCREEN GRABS FOR BREAST CANCER INFORMATION SITES

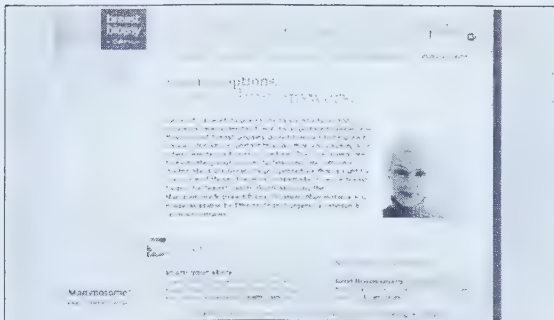
American Breast Cancer Society



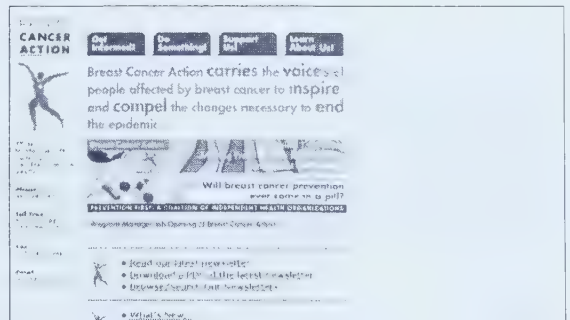
Avon Breast Cancer Crusade



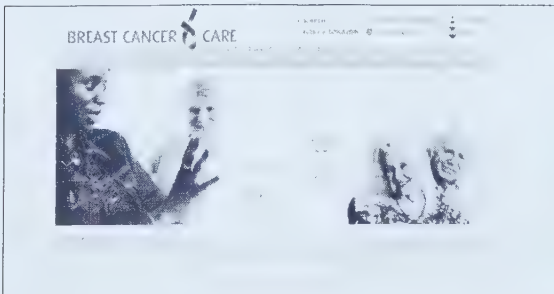
BreastBiopsy.com



Breast Cancer Action



Breast Cancer Care

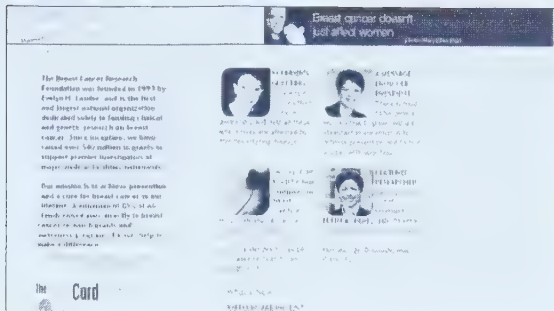


Breast Cancer Fund

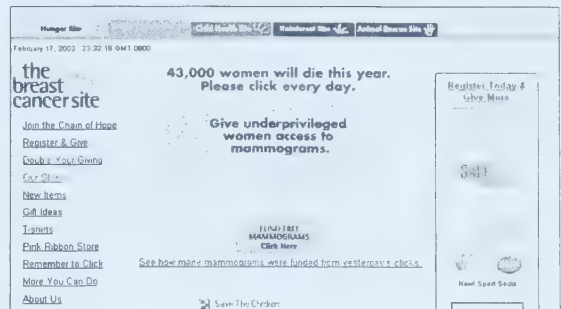


C: WEB SITE CRITIQUES: SCREEN GRABS FOR BREAST CANCER INFORMATION SITES

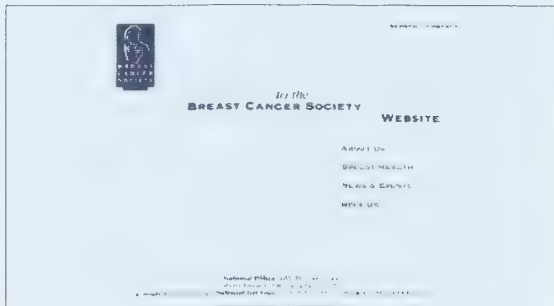
Breast Cancer Research Foundation



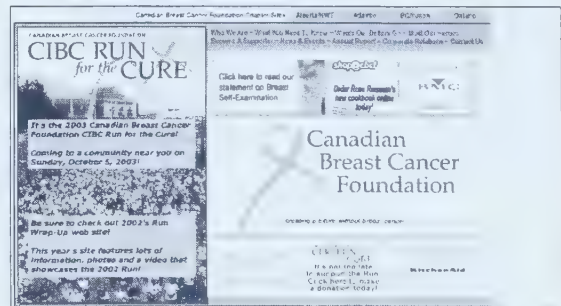
The Breast Cancer Site



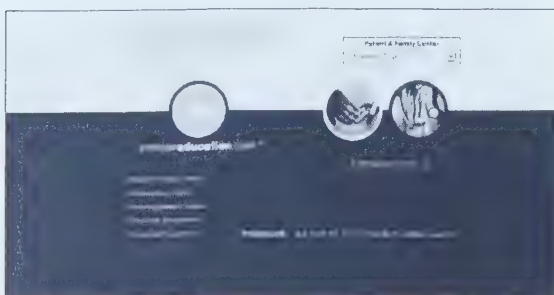
Breast Cancer Society of Canada



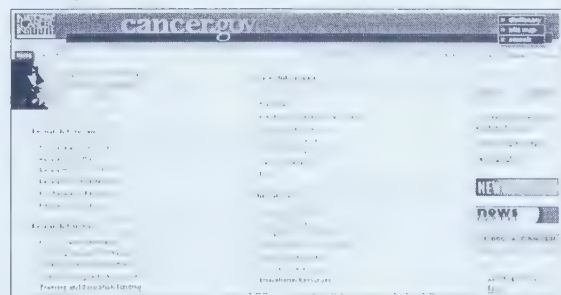
Canadian Breast Cancer Foundation



Cancer Education

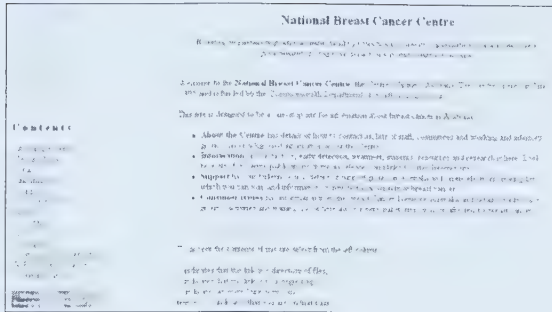


Cancer.gov

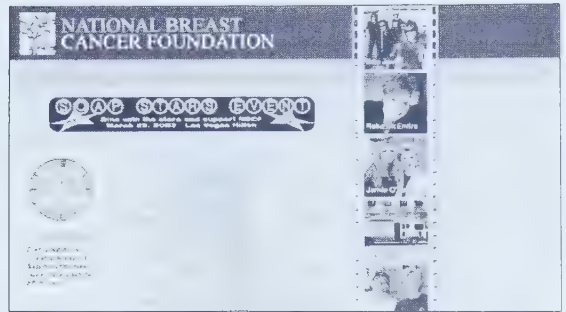


C: WEB SITE CRITIQUES: SCREEN GRABS FOR BREAST CANCER INFORMATION SITES

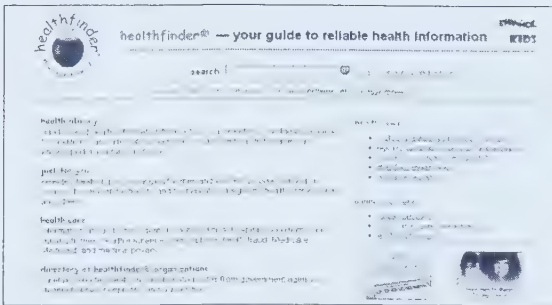
National Breast Cancer Centre



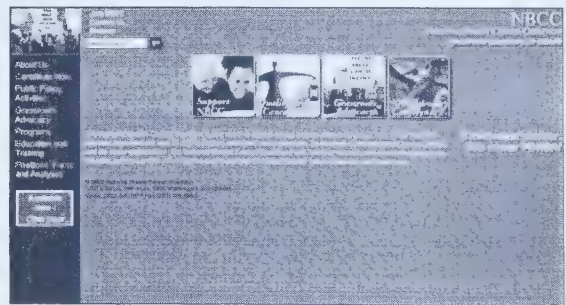
National Breast Cancer Foundation



Health Finder



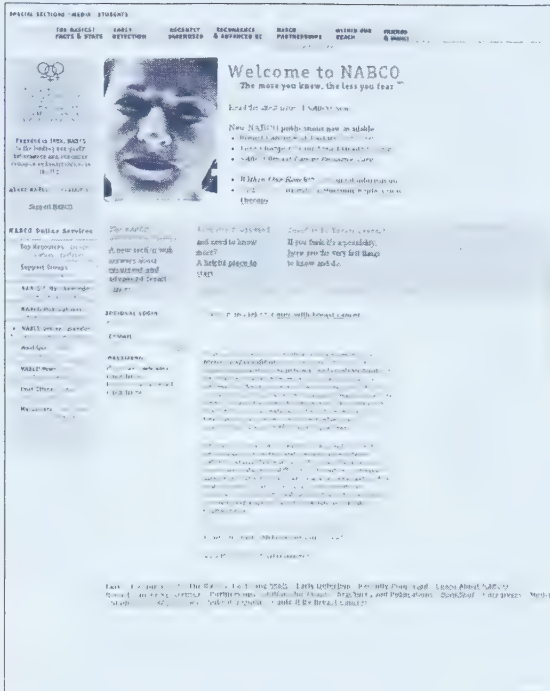
National Breast Cancer Coalition



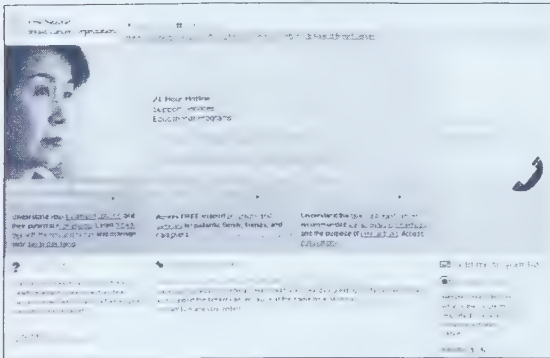
C: Web site critiques

C: WEB SITE CRITIQUES: SCREEN GRABS FOR BREAST CANCER INFORMATION SITES

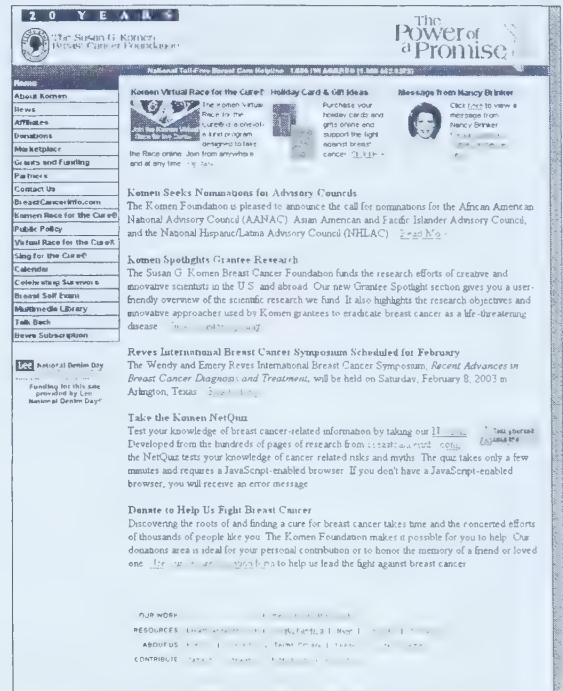
NABCO



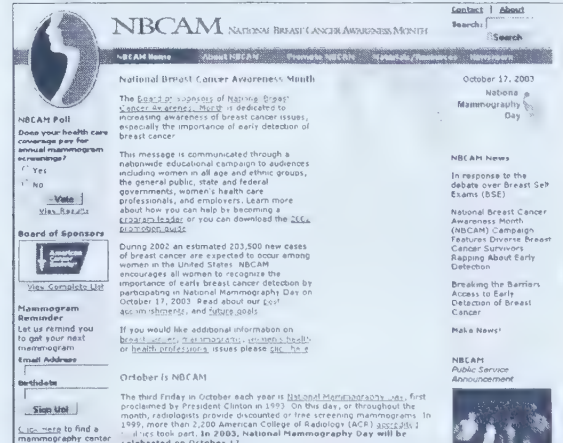
Y-me



Susan Komden Foundation



NBCAM

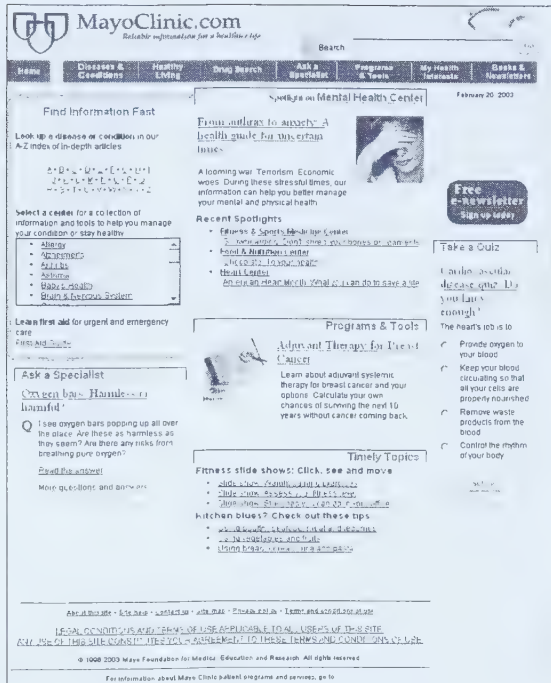


[illegible][illegible]

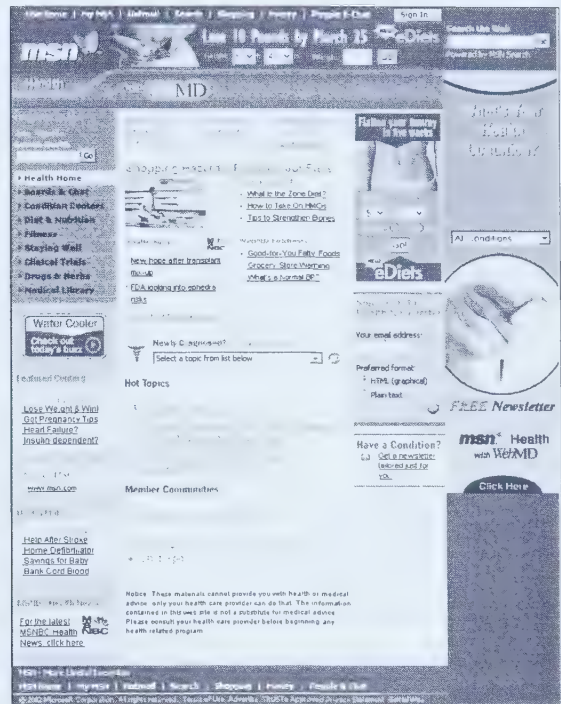
The collage consists of several overlapping screenshots of the WeMD website. At the top, a search bar is visible with the text "Search". Below it, there's a "WeMD Today" section. A prominent article titled "BODY" by "Ch. My" is featured, with a sub-headline "A new study suggests that...". To the right of this article, there's a section titled "Use 100% of your..." and another titled "Watch up to 100% of your...". Below the "BODY" article, there's a "D" logo and a "WeMD" logo. In the bottom left, there's a "GET FIRM" advertisement with a woman's image and the text "eDiets". In the bottom right, there's a "eDiets" logo and a "WeMD" logo. The collage also includes a "WeMD Today" section with a "New" button and a "WeMD" logo.

C: WEB SITE CRITIQUES: SCREEN GRABS FOR HEALTH INFORMATION PORTAL SITES

MayoClinic.com



MSN Health



C: WEB SITE CRITIQUES: SCREEN GRABS FOR MISCELLANEOUS SITES

MSN

The MSN homepage features a top navigation bar with links for Home, News, Sports, Finance, and more. Below this, there are several content blocks:

- Today on MSN:** Includes sections for 'The Week in Pictures', 'Many Potter cartoons', '7 deck & patio ideas', and 'Check your horoscope'.
- Also on MSN:** Features 'Domestic prices included: These 10 aren't your basic cheesy ballads', 'The next Kourikovas: Can these girls compete?', and 'Watch the hilarious Legally Blonde 2 trailer'.
- Most Top 10 authors:** Lists authors like Stephen King, J.K. Rowling, and others.
- Top 10 movies:** Lists movies like 'The Matrix', 'The Lord of the Rings', and others.
- Top 10 TV shows:** Lists TV shows like 'The Sopranos', 'The X-Files', and others.
- Top 10 books:** Lists books like 'The Hobbit', 'The Lord of the Rings', and others.
- Top 10 songs:** Lists songs like 'Smells Like Teen Spirit', 'Rhythm Nation', and others.
- Top 10 albums:** Lists albums like 'The Black Album', 'The Black Album', and others.
- Top 10 movies:** Lists movies like 'The Matrix', 'The Lord of the Rings', and others.
- Top 10 TV shows:** Lists TV shows like 'The Sopranos', 'The X-Files', and others.
- Top 10 books:** Lists books like 'The Hobbit', 'The Lord of the Rings', and others.
- Top 10 songs:** Lists songs like 'Smells Like Teen Spirit', 'Rhythm Nation', and others.
- Top 10 albums:** Lists albums like 'The Black Album', 'The Black Album', and others.

Meals.com

The Meals.com website has a clean, organized layout with a focus on recipes. Key features include:

- Recipe Search:** A prominent search bar at the top right.
- Welcome to Meals.com:** A message from the site's founder, Michael J. Smith.
- Recipe Of The Day:** A featured recipe with a large image and detailed instructions.
- Most Popular Recipes:** A list of recipes that are popular among users.
- Recipe Search:** A section for finding recipes based on specific ingredients or dietary preferences.
- Special Diet Recipes:** A section for recipes suitable for various diets like vegetarian, vegan, etc.
- Cooking Tips:** A section providing helpful advice for home cooks.
- Main Dish Recipes:** A section for recipes for the main course of a meal.
- Dessert Recipes:** A section for recipes for sweet treats.
- Appetizer Recipes:** A section for recipes for small bites.
- Side Dishes:** A section for recipes for accompaniments.
- Entertaining Ideas:** A section for ideas on how to host a party.

Royal Bank

The Royal Bank website is designed to provide comprehensive financial services. It includes:

- Online Banking:** A section for managing accounts and transactions online.
- Personal:** A section for personal banking services like mortgages and loans.
- Business:** A section for business banking services.
- Investment Products & Services:** A section for investment advice and products.
- Banking Products & Services:** A section for core banking services like checking and savings accounts.
- New & Notable:** A section highlighting new services and notable achievements.
- Contact Us:** A section for finding local branches and contact information.

C: WEB SITE CRITIQUES: WEB SITE TASK ANALYSIS

Introduction

In an effort to gain a clearer view of the types of tasks that users are currently managing online, I analyzed twenty-one Web sites that fit into the following categories: Banking, Portals, Shopping, Recipes, Healthcare, Library, University systems, Breast Cancer and others. I chose these particular Web sites because task managing, as opposed to the presentation of content, was one of the primary components of their functionality.

Banking

Bank of Montreal (<https://www1.bmo.com/cgi-bin/netbnx/NBmain>)

Canada Trust (TD) (<https://easyweb.tdcanadatrust.com/>)

Scotia Bank (<http://www.scotiabank.com/>)

Royal Bank (<http://www.royalbank.com>)

- view account information
- transfer funds
- electronically pay bills to more than 4,000 companies
- order cheques
- view accounts from other institutions
- copy to accounting software
- receive billing and other documents
- schedule automatic payments for recurring bills with the Memorized function
- pay other RBC Royal Bank customers
- view US and Canadian accounts on one page
- check balances on RBC Royal Bank or Royal Trust accounts
- review and print recent account entries for record keeping purposes
- make payments or draw down on your Royal Credit Line
- purchase additional non-registered GICs, change GIC maturity instructions or change interest disbursement account information
- buy and sell non-registered Royal Mutual Funds
- view RRSP details and make contributions to your existing RBC Royal Bank RRSP in RBC Royal Mutual Funds, Savings Deposits and GICs
- research and apply for loans
- review details of your mortgage and skip or double-up mortgage
- obtain balances, make payments or waive/delay payments on most loans

- research interest rate information from within Online Banking
- log into your Action Direct NetAction account to trade online
- access your accounts at RBC Dominion Securities
- access financial tools, calculators and product information
- research other ways you can bank
- get daily numbers: rates, economic updates
- Manage your financial life. Real time. Any Time. - RBC Financial

Portals

MSN (<http://www.msn.com>)

Yahoo.com (<http://www.yahoo.com>)

Netscape.com (<http://www.netscape.com>)

AOL (<http://www.aol.com>)

- check email
- shop
- chat with others
- buy, sell, trade stocks
- search for a variety of items including: ancestors, jobs, apartments, dates, best airline deals, etc.
- refinance loans
- bid on auction items
- play games
- send greeting cards
- view and post photos
- customize the interface

Shopping

Amazon (<http://www.amazon.com>)

- create a wish list of items you would like to purchase
- view the wish lists of others
- write reviews
- share purchases
- join a purchase circle
- create reminders
- create a list of favorite products that will be displayed on the About You page
- sell own products

- sell digital content
- buy gifts to be sent to others

Recipes

Meals.com (<http://www.meals.com>)

Meals for You (<http://www.mealsforyou.com/>)

My Meals (<http://www.mymeals.com/>)

- search for and view recipes
- with the click of one button, store the ingredients of a recipe into a named shopping list
- store favorite recipes for future viewing
- create and store meal plans
- change preferences
- read advice and articles on various cooking topics
- sign up to receive recipes through email
- learn about specific Nestle products
- sign up for product offers
- write recipe reviews

Healthcare

Natural Healthlink (<http://www.naturalhealthlink.com>)

- maintain online exercise, food, and health journals
- share journals with medical practitioners
- share food journal with other members
- communicate with other members
- maintain more than one health practitioner
- shop for holistic healthcare products

Library

University of Alberta (<http://www.library.ualberta.ca>)

- renew and reserved materials
- pay fines
- download articles
- chat with library employees
- recommend a purchase
- place an idea into the suggestion box

- request an inter-library loan
- view account

University systems

University of Alberta Bear Tracks (<http://www.beartracks.ualberta.ca>)

- pay tuition
- view grades
- drop classes
- change timetable
- change contact information

Breast Cancer

Y-me National Breast Cancer Organization(<http://www.y-me.org/>)

National Alliance of Breast Cancer Organizations (<http://www.nabco.org/>)

Breast Cancer Fund (<http://www.breastcancerfund.org/>)

The Breast Cancer Research Foundation (<http://www.bcrfcure.org/>)

Canadian Breast Cancer Foundation (<http://www.cbcf.org/>)

Susan Komen Breast Cancer Foundation (<http://www.komen.org>)

- submit breast cancer and breast health questions to be answered by a trained breast cancer survivor
- join a mailing list
- participate in a weekly pool
- donate funds
- view movies
- sign-up for an email reminder (for breast exams)
- view publications in PDF format
- submit your own events to an online calendar
- order books and products
- email cards to friends
- save info to My Library
- take a quiz
- join a virtual race
- look for an event by state, year, month, etc.
- read and post survivors' stories
- read and post family and friends' stories
- read and post thoughts about participating in a Race for the Cure
- read and post what you are doing to raise awareness or funds
- subscribe to a newsletter

Others

TaxWiz (<http://www.taxwiz.com>)

Lavalife (<http://www.lavalife.com>)

EBay (<http://www.ebay.com>)

Kodak (<http://www.kodak.com>)

Tango (<http://www.flytango.com>)

My Virtual Model (<http://www.myvirtualmodel.com>)

- file taxes
- place and view personal ads
- bid on auction items
- share photos
- book flights
- try clothing on a virtual model that is based on your body statistics

D: USABILITY TESTS VIA SMALL GROUP INTERVIEWS

Undergraduate VCD students

60 min x 2: March 18 & 19, 2003

Eighteen students from two 596, Interactive Media B, classes

Introduction

Four mock-ups were shown to the class on a large-screen projector. The students were asked to give their general impressions of the page design, usability, and look-and-feel of the mock-ups. They were given a short introduction to the purpose, target audience, and content area of my project. They were invited to participate in an informal conversation. All students agreed to participate. Blaine Bertsch, the instructor for the course, also offered comments.

Starting point

- global links (primary navigation) seem to add an unnecessary fourth dimension
- metaphors might be useful in explaining the three choices, ie. Library vs. ...
- portal, info, action very unclear in function
- target audience might not understand these
- bottom section as different sections with different options
- are the bulleted points clickable?
- positives and negatives (strengths and weaknesses) of each option should be given
- combine into three simple buttons
- is login required on the Home page?
- simplify into three features with three big buttons
- does this site serve males as well as females?

Info page

- context is much clearer here
- “let us know what you think” is too vague
- add “Archives” to news
- provide a “Home” link to the section Home page as well as a link to the global Home

Portal

- branding: create a clear parent brand that is differentiated between sections

- look at iLife, iToons, iMovie
- branding can overcome the confusion that is currently present on the 1st page

Dr. Stan Ruecker

- the action-driven mock-up does not cue me that there is any difference between it and the other 2
- it does not look like this is “My place”
- make it look like it has been used
- Milena, you have (5) new messages
- My contacts: Jane, Billy, Sally, Kim

693 Graduate Class

- the 1st mock-up looks the most appealing because of the strong imagery
- make the 1st mock-up the starting point for all 3 versions
- the intense women photographs are quite striking and attractive; hard to get past them; want more in the other mock-ups

Professor Frascara and Professor Colberg

- tutorial seems very important
- restrict target group: females 30-50, semi-literate computer users
- sequence is an issue
- look at Chatelaine Magazine
- jump-off mock-up not clear; separate fields not connected to one another
- icon problem on portal
- show the process of signing-up
- chat window: pics not clear; how do they relate to names?

E: ETHICS REVIEW DOCUMENTS

The following pages contain the original Ethics Review documents that I submitted to Lynn Penrod, Associate Dean (Research), Faculty of Arts, and which were subsequently approved.

**UNIVERSITY OF ALBERTA
FACULTY OF ARTS ETHICS REVIEW BOARD (REB)**

***APPLICATION TO CONDUCT RESEARCH
INVOLVING HUMAN PARTICIPANTS***

Principal Investigator(s):Name: Milena Radzikowska
Department: Art and Design
Phone number: 492-7877
E-mail address: milenar@ualberta.ca
(If student) **Name / Department**
of Faculty Supervisor / Sponsor Professor Bonnie Sadler Takach

Project Title: **Designing Web-based Task Systems:** Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Funding Source(s): Department of Art and Design, University of Alberta

Brief Description of Project / Research Design. Please attach a more detailed proposal (i.e., 1-2 pages), including copies of research instruments (e.g., questionnaires).

The majority of Web sites that have been created up to this point have focused on providing the user with information. Some more recent Web site designs demonstrate a shift in focus from content distribution to user empowerment. These types of sites adapt tasks that the user would typically perform in the analog world, to the World Wide Web. Our daily tasks fall into one of four categories: building communities, looking for information, using resources, and expressing creativity. My hypothesis is that the design of Web sites with the performance of tasks in mind can be more widely applied, most notably to the provision of health care content and resources. Within the broad research area of general health care, I focus on one specific condition: breast cancer. The target audience is women who, at some point, have been diagnosed with breast cancer, with a view to research potential tasks that would be faster, easier, and/or more pleasurable if performed on the World Wide Web.

The studies conducted for this research project will occur in two phases involving focus groups and usability interviews.

Phase I – Focus Groups

I will run two focus groups: (1) between five and seven women who have never been diagnosed with breast cancer; (2) between five and seven women who have, at some point, been diagnosed with breast cancer.

I hope to find out the degree of interest in a Web-based task system; and what specific activities would be the most useful to members of the target audience group, within the four types of tasks.

Please see the attached Detailed Proposal for a more thorough description of the methodology and target audience.

Phase II – Usability Tests

Following the focus group tests, I will re-design the Web site prototype to incorporate my findings. I will then conduct five usability tests (each with a different volunteer) using interviews and a think aloud protocol to assess the prototype's functionality in terms of navigation and comprehension. I will ask each volunteer to perform a series of tasks and tell me what they are doing and why, while I observe and record their actions. Notes will be taken electronically. The interviews will not be voice recorded.

Please see the attached Detailed Proposal for a more thorough description of the methodology and target audience.

Assessment of Risk to Human Participants.

Participation in each of the focus group sessions requires roughly one hour. Participation in each of the interview sessions requires roughly forty-five minutes. A volunteer will be asked to participate in only one of the focus groups or in one interview. There are no known risks associated with this study.

Description of Procedures to be Undertaken to Reduce Risk to Human Subjects. Please attach copies of consent forms and other similar documents.

An opening statement will be read at the start of each focus group session and interview, outlining the purpose of the research, the voluntary nature of participation, the right to opt out at any time, and the anonymity and confidentiality of the information given (see attached Focus Group Invitation and Interview Invitation). In the focus groups, an additional statement will be made saying that there is a limit to confidentiality and anonymity in this case since I can not guarantee that the other volunteers will not disclose any information. However, I ask all the volunteers to keep all discussion from the focus group both anonymous and confidential.

I have read the UNIVERSITY OF ALBERTA STANDARDS FOR THE PROTECTION OF HUMAN RESEARCH PARTICIPANTS [GFC Policy Manual, Section 66] and agree to abide by these standards in conducting my research.

(If Student)

_____ **Signature of Faculty Supervisor/sponsor**

_____ **Date**

Principal Investigator:

_____ **Signature of Principal Investigator**

_____ **Date**

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Phase I Details

Focus group participants

The first focus group will consist of between five and seven professional women, between the ages of 40 and 60, who have never been diagnosed with breast cancer. The second focus group will consist of between five and seven professional women, between the ages of 40 and 60, who have, at some point, been diagnosed with breast cancer. A volunteer will be asked to participate in only one focus group session or one usability test. No identifiable health care information or records will be used in this study. Since the study deals with the use of the computer and the World Wide Web, I chose to use professional women to increase the chance that they have daily computer and Internet exposure.

I contacted the Edmonton Cross Cancer Institute and I am awaiting their answer as to whether I can recruit volunteers through their organization. Attached you will find the **recruiting posters** for both the non-breast cancer group and the breast-cancer group.

The participants will be asked to volunteer for this study. They will not be offered an honorarium for their time.

The focus group sessions

The two groups of women will be invited to attend one of two focus group sessions by a written invitation (see attached **Focus Group Invitation**). At the session they will first complete a written survey (see attached **Focus Group Survey**), then speak to a number of focus group questions (see attached **Focus Group Questions A and Focus Group Questions B**).

An opening statement will be read at the start of each focus group session, outlining the purpose of the research, the voluntary nature of participation, the right to opt out at any time, and the anonymity and confidentiality, and limits to, of the information given (please see attached **Opening Statement**).

Focus group participants will be asked to provide consent in writing (see attached **Focus Group Consent Form**).

The meeting will be no longer than one hour in length. The survey will take approximately fifteen minutes to complete, and the focus group session will take up the remaining forty-five minutes. The survey will rate how likely or unlikely they are to engage in the listed activities.

It will be the same for both focus groups. Administering the survey at the beginning of the session is meant to ensure the following:

- that the participants express their own points of view and not the groups' consensus;
- that the participants are quickly introduced to the topic area that will be discussed without too much additional prompting (see attached **Focus Group Survey**).

The sessions will be conducted by Milena Radzikowska, with the aid of an electronic audio recorder. Written notes will be taken as necessary. The moderator will be accompanied by a human recorder, who will not participate in the questioning or prompting. The researcher and partner will not keep records of the participants' names or any distinguishing characteristics.

Sixteen main questions will be asked during each focus group session. For the sessions containing women with breast cancer, a few of the questions will be more directly reflecting that experience (please see attached **Focus Group Questions A and Focus Group Questions B** for the list of questions planned for each focus group.)

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Dear Madam,

My name is Milena Radzikowska, and I am in the Master in Design program at the University of Alberta. Currently I am involved in a study that deals with the design of supportive Web sites for women battling breast cancer. The question that I am researching is to what extent members of the target audience group are interested in a task driven Web site; and what specific on-line activities might be useful to women with breast cancer.

I would like to collect the views of professional women, between the ages of 40 and 60. I would like to invite you to participate in a focus group study, along with six others, which will investigate your interest in the concept of action driven Web site design, and your ideas about the types of activities that you may be interested in doing when visiting such a site. The focus group will take place at the University of Alberta, in the Fine Arts Building, and should take no longer than one hour of your time. Your participation will be very valuable in the creation of useful Web sites.

Your name is not necessary, and will not appear in any form in the records or reports developed during or after the completion of this study.

Your participation in this discussion is completely voluntary, and you have the right to leave at any time. Your name is not necessary, and will not appear in any form in the records or reports developed during or after the completion of this study. However, due to the group nature of the focus group session, I can not guarantee that other group members will not disclose any information. I ask everyone to maintain the confidentiality of our discussion. The focus group session will be audio taped and used for research purposes only. No names will be associated with the information found on the tape. You will be asked to sign an informed consent form at the start of the session.

Thank you very much, in advance, for your participation.

Sincerely,

Milena Radzikowska, University of Alberta
780.435.8217
milenar@ualberta.ca

For further information contact
Professor Bonnie Sadler Takach
780.492.7859
bbs@ualberta.ca

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Focus Group Opening Statement

Hello,

My name is Milena Radzikowska, and I am in the Master in Design program at the University of Alberta. Currently I am involved in a study that deals with the design of supportive Web sites for women battling breast cancer. The question that I am researching is to what extent members of the target audience group are interested in a task driven Web site; and what specific on-line activities might be useful to women with breast cancer.

During the next hour, I would like you to tell me your ideas on the types of information and activities that you might be interested in finding and doing on such a Web site.

I encourage you to think about what you may find most useful, whether it can already be found on an existing site or not, without considering technical limitations. There are no wrong answers.

I also encourage you to build on each other's ideas, I only ask that one person speaks at a time, so that I have an easier time noting your comments.

Your participation in this discussion is completely voluntary, and you have the right to leave at any time. Your name is not necessary, and will not appear in any form in the records or reports developed during or after the completion of this study. However, due to the group nature of the focus group session, I can not guarantee that other group members will not disclose any information. I ask everyone to maintain the confidentiality of our discussion. The focus group session will be audio taped and used for research purposes only. No names will be associated with the information found on the tape. You will be asked to sign an informed consent form at the start of the session.

Any questions?

Thank you, very much, for your participation.

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Focus Group Informed Consent Form

Purpose of the Research

This research project is intended to gain insight into the use of Web sites, opinions about the extent of interest in a breast cancer specific, task driven Web site design, and the types of activities that would be most useful on such a Web site.

Benefits Envisaged

This information will then be used to inform the design of a breast cancer specific Web site.

Tasks to be Performed

The study requires you to complete a written survey and speak in a focus group on breast cancer specific, task driven Web site design.

Your Rights

Participation in this study is voluntary and you may opt out at any time without penalty. Information provided will be kept confidential, and your name will not appear in any report related to this project. However, due to the group nature of the focus group session, I can not guarantee that other group members will not disclose any information. I ask you all to maintain the confidentiality of our discussion. The focus group session will be audio taped and used for research purposes only. No names will be associated with the information found on the tape.

Inconveniences or Risks Involved

The survey requires roughly fifteen minutes to complete. The focus group session including the survey will require approximately one hour of your time. There are no known risks associated with this study.

Investigator

Milena Radzikowska, M.Des. candidate (visual communication design),
Department of Art and Design

I, _____
understand that my participation is voluntary and that I may opt out at any time. The reasons for the study and tasks to be completed have been explained to me. I understand that the information I provide will be kept confidential, with the limitations explained above, and that no names will appear in any report related to this project.

Signature of participant

Date

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Survey

Imagine that a Web site has been created specially for women who, at some point, have been diagnosed with breast cancer. This Web site allows you to create a private and personal Web page that can feature a selection of your favorite on-line activities. It also allows you to share some of the information that you have created on your personal page with other women who are also using this Web site.

The items listed below are some of the activities that could be performed on this site.

Please rate **how likely you are to engage in the following activities** by placing a check mark in the appropriate box. At the end, please list any activities that were not mentioned in the survey, but which you think may be useful on such a site.

	Very unlikely	Somewhat unlikely	Undecided	Somewhat likely	Very likely
1. Create your own Web page					
2. Meet and communicate with other women who are on the system					
3. Keep a personal journal					
4. Share journal entries with other women who are on the system					
5. Look for breast cancer information					
6. Look for meal recipes					
7. Shop for hair accessories					
8. Read news related to breast cancer					
9. Take fun quizzes					
10. Play games					
11. Send messages to other women					
12. Send virtual gifts to other women					
13. Send cards to other women					
14. Share parts of your Web page with other women					
15. Visit other personal Web pages					
16. Buy health products					
17. Personalize your Web page with favorite images and/or colors					
18. Share your purchase choices with other women					
19. Create a wish list of items					
20. Write reviews of articles					
21. Share photos					
22. Place classified ads					
23. Visit personal memorials					

Other (please list)

Additional comments

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Focus Group Questions A

General Internet Use

1. How much of your typical day is spent using the Internet?
2. What do you like about the Internet?
3. What kinds of things do you dislike about the Internet?
4. What do you wish you could do on the Internet that you can't do now?
5. What makes a Web site useful?
6. What makes a Web site less than useful?

Personal Web Site Creation

1. Have you ever wished that you could create your own personal Web site?
2. What would you use your Web site for?
3. What kind of things would you have on it?
4. What, if anything, prevents you from creating your own Web site?

Now imagine that you can create your own Web site: a Web site where you can keep some things personal make other things public and shared with others.

1. Can you think of anything that you might enjoy doing on such a Web site?

On-line Task Systems

Now imagine that you have access to a Web site that provides resources and community support to women who have been diagnosed with breast cancer.

1. What type of information would you like to find on such a Web site?
2. Would connecting with other women who have been diagnosed with breast cancer be important to you?
3. Can you think of any daily tasks that could be done on the Internet?
4. Can you think of any resources that you might want to share, on a Web site, with other women who are in a similar position?
5. Do you have any further comments?

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Focus Group Questions B

General Internet Use

1. How much of your typical day is spent using the Internet?
2. What do you like about the Internet?
3. What kinds of things do you dislike about the Internet?
4. What do you wish you could do on the Internet that you can't do now?
5. What makes a Web site useful?
6. What makes a Web site less than useful?

Breast Cancer Web Sites

1. Have you looked for information about breast cancer on the Internet?
2. Can you think of some sites that you have found useful that deal with this kind of information?
3. Is there anything that you wish you could do, or information you wish you could find, that you currently can't on such a site?
4. Is it important for you to connect with other women who have been diagnosed with breast cancer important to you?

Personal Web Site Creation

1. Have you ever wished that you could create your own personal Web site?
2. What would you use your Web site for?
3. What kind of things would you have on it?
4. What, if anything, prevents you from creating your own Web site?

Now imagine that you can create your own Web site: a Web site where you can keep some things personal make other things public and shared with others.

1. Can you think of anything that you might enjoy doing on such a Web site?

On-line Task Systems

Now imagine that you have access to a Web site that provides resources and community support to women who have been diagnosed with breast cancer.

1. What type of information would you like to find on such a Web site?
2. Would connecting with other women who have had or are who have been diagnosed with breast cancer be important to you?
3. Can you think of any daily activities that could be done on the Internet?
4. Can you think of any resources that you might want to share, on a Web site, with other women who are in a similar position?

Volunteers Needed

for a Web Site study

I am a graduate student in visual communication design
at the University of Alberta.

I am looking for 5 women
between 35 and 60 years of age,
who use computers during the work day,
to participate in a focus group
looking at breast cancer support Web Sites.

If you can help me, please
call me (Milena) at 435-8217,
or e-mail me at milenar@ualberta.ca.

The 1 hour session will take place at the
University of Alberta on July 15
from 6:30 until 7:30 pm.

(Milena) 435-8217
milenar@ualberta.ca

Focus Group
(Milena) 435-8217
milenar@ualberta.ca

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Volunteers Needed

for a Web Site study

I am a graduate student in visual communication design
at the University of Alberta.

I am looking for 5 women
between 40 and 60 years of age
who have breast cancer, and
who use computers during the work day,
to participate in a focus group
looking at breast cancer support Web Sites.

If you can help me, please
call me (Milena) at 435-8217,
or e-mail me at milenar@ualberta.ca.

The 1 hour session will take place
before July 17.

Refreshments will be provided.

Focus Group

(Milena) 435-8217

milenar@ualberta.ca

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Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Phase II Details

Usability test participants

The target participants in the usability tests will be the same as in the first focus group: five professional women between the ages of 40 and 60, who have never been diagnosed with breast cancer. No identifiable health care information or records will be used in this study.

The participants will be asked to volunteer for this study. They will not be offered an honorarium for their time.

A volunteer will be asked to participate in only one focus group session or one usability interview.

The usability test sessions

Each of the five participants will be presented with a series of paper prototypes of the Web interface. They will be asked to simulate the use of a mouse with their finger, thereby “clicking” on the appropriate buttons. The test will consist of three parts:

- the sign-up process: the user will be asked to go through a five-step sign-up process (one prototype will be created for each of the five steps). The user will be given a short introduction to the nature of the Web site, and then offered no additional prompts.
- general system navigation: the user will be presented with one prototype taken from the inside of the Web site, and asked a series of usability questions.
- general observations: the user will be asked for her general impressions of the Web interface (any additional comments.)

An opening statement will be read at the start of each interview, outlining the purpose of the research, the voluntary nature of participation, the right to opt out at any time, and the anonymity and confidentiality of the information given (see attached **Usability Test Opening Statement**). Interview participants will be asked to provide consent in writing (see attached **Usability Test Consent Form**).

Each interview will be no longer than forty-five minutes in length. The interviews will be conducted by Milena Radzikowska. Notes will be taken, electronically, as necessary. The interviews will not be voice recorded.

The final questions for the interviews will not be completed until after the focus groups sessions, as the data from these directly informs the nature of the visual mockups, and thus the interviews.

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Usability Test Opening Statement

Hello,

My name is Milena Radzikowska, and I am in the Master in Design program at the University of Alberta. Currently I am involved in a study that deals with the design of supportive Web sites for women battling breast cancer. The question that I am researching is to what extent members of the target audience group are interested in a task driven Web site; and what specific on-line activities might be useful to women with breast cancer.

During the next hour, I would like to show you a series of printouts of one such Web site. I will be asking a series of questions that are aimed at testing the usability of the Web site, not at testing, in any way, your ability. I am not testing your performance, but the performance of the Web site.

Your participation in this discussion is completely voluntary, and you have the right to leave at any time. Your name is not necessary, and will not appear in any form in the records or reports developed during or after the completion of this study.

Any questions?

Thank you very much for your participation.

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Usability Test Invitation

Dear Madam,

My name is Milena Radzikowska, and I am in the Master in Design program at the University of Alberta. Currently I am involved in a study that deals with the design of supportive Web sites for women battling breast cancer. The question that I am researching is to what extent members of the target audience group are interested in a task driven Web site; and what specific on-line activities might be useful to women with breast cancer.

At this point in the research I would like to test the usability of one such Web site. I would like to invite you for a personal, forty-five minute interview, where I will be asking a series of questions that are aimed at testing the usability of a Web site. The interview will take place at the University of Alberta. Your participation will be very valuable in the creation of useful Web sites.

Your name is not necessary, and will not appear in any form in the records or reports developed during or after the completion of this study. Your participation in this study is voluntary and you have the right to withdraw at any time. You will be asked to sign an informed consent form at the start of the interview.

Thank you very much, in advance, for your participation.

Sincerely,

Milena Radzikowska
University of Alberta
780.435.8217
mlenar@ualberta.ca

For further information contact
Professor Bonnie Sadler Takach
780.492.7859
bbs@ualberta.ca

Designing Web-based Task Systems: Can we make daily activities faster, easier and more pleasurable for women with breast cancer?

Usability Test Informed Consent Form

Purpose of the Research

This research project is intended to gain insight into the use of Web sites, opinions about the extent of interest in a breast cancer specific, task driven Web site design, and the types of activities that would be most useful on such a Web site.

Benefits Envisaged

This information will then be used to improve the usability of a prototype for a breast cancer specific Web site.

Tasks to be Performed

During the course of the study you will be asked to complete a usability test by viewing paper prototypes of the proposed Web site.

Your Rights

Participation in this study is voluntary and you may opt out at any time without penalty. Information provided will be kept confidential, and your name will not appear in any report related to this project.

Inconveniences or Risks Involved

The interview requires roughly forty-five minutes of your time. There are no known risks associated with this study.

Investigator

Milena Radzikowska, M.Des. candidate (visual communication design),
Department of Art and Design

I, _____
understand that my participation in this focus group on breast cancer specific, action driven Web site design is voluntary and that I may opt out at any time. The reasons for the study and tasks to be completed have been explained to me. I understand that the information I provide will be kept confidential, and that no names will appear in any report related to this project.

Signature of participant

Date

E: FOCUS GROUPS AND SURVEY: FOCUS GROUP “A” TRANSCRIPT

- 45 min: July 14, 2003
- Four female participants, between the ages of 35 and 50

Introduction

See Focus Group Opening Statement

General Internet Use

1. How much of your typical day is spent using the Internet?

Anna: I'm on my computer all day long. I own my own private consulting business, and I do my work online, basically, doing projects, constructing educational programs within the health field, and emailing back and forth files, and searching for information, doing research in peer-reviewed journals, and through, because I have access to the University of Alberta here. I couldn't do my work without the Internet.

Marie: I am on the Internet about an hour a day. Summer times when I don't really spend a lot of time in doors. I would imagine in the winter I will spend more time.

Sue: As president of the Dragon Boat team I am using the Internet for email everyday. I try to limit it to an hour but it could be longer than that and the executive communicates a lot by email and also sending letters and information to all members, by email. We find that the best way to communicate. Most of our members are using the Internet, and it seems that the information gets delivered better that way than for those who get it by telephone. And when I was teaching we also had an email system (), and we even had to take attendance over the Internet, email to the office, and all the messages that were sent by the administration and between schools was communicated by email.

Beth: I use email to communicate with our group, with our family. I'm on it twenty minutes to half an hour a day. I use it at work a lot, for research. I have a consulting business as well, so we do a lot of Web searches for groups that will increase our market. I have my own Web page at work. I search for a lot of Web things. On a personal level, if we're going to, say for instance plan a trip, or purchase something so we would go and do a search. So we bookmark a lot of favorites. And sometimes we go and look at those.

1.1 Do you use chat programs at all?

Beth: My daughter. (General laughter) I have a little bit.

2. What do you like about the Internet?

Sue: The wealth of knowledge. If you wanna know something, you can find it.

Anna: I like visual images. You can actually see it. And I like seeing views of things. You know how you can turn things? (I nod)

Beth: I like the way that you can communicate with people across the world that otherwise is difficult if not impossible. And to be able to do it in other time zones so that, I guess it's the idea of, what do you call it, asynchronous communication, where you're actually sending messages at your time, best time, and they can respond at their best time.

3. What kinds of things do you dislike about the Internet?

Sue: Junk mail and spam. That's a huge problem for us at work.

Beth: The amount of time that it can take. You can sit down and think you will be finished in twenty minutes but it takes up the rest of your day. And I find that if I'm not checking my email everyday, that in a couple of days it can get up to thirty messages. Some of them you just have to get rid of, it's junk mail. (Pause) Sometimes I get frustrated if I'm in a site and I go to a link that I think it's the right place to go and it's not and I'm constantly going clicking on links and you're just being bounced around. It's almost like being on a phone call: do you want this, press 1, do you want that, press 2. And it can take five minutes before you actually physically talk to someone. And it's the same thing with email - if it's not a good linked site, and doesn't have good info on its Home page it can be, you know, you can get lost in there. (Pause) Or you can go in and find something once, but to go in and find it again, you have to put it in your favorites. (General laughter)

4. What do you wish you could do on the Internet that you can't do now?

(Pause)

Sue: I am something of a neophyte so I don't even know how to print PDF pages.

Beth: Well, this is something that I will be getting access to this fall because part of what I do in my work is I teach over the Internet a graduate level course, and this may be something that you could incorporate in what you're doing. You probably know the programs on campus. It's a new program coming in. It's actually a whiteboard, where you can actually as a teacher with your students and you have to go by turn writing on it. You can actually do the text as well as the visual drawing on it, so there's all kinds of ... I obviously have to go through the training program yet this fall, and I don't teach

till January so I have time to do that. There's all kinds of opportunities there for this site that you're thinking about designing, to get really interactive, not just on the text level, but on the more artistic side, with drawings and things. (Pause) The U of A is a leader in this area.

4.1 Do you do anything that has to do with shopping, communicating with others, banking or paying bills?

Marie: It's pretty easy right now. Saves me a lot of time. (Banking)

(Q: Banking? Two out of four "Yes" for online banking.)

Marie: I should clarify: My husband does all the banking. If you would tell me to do it right now, I couldn't do it. My kids and my husband are much more into the computer than me. I'm kind of like you, I just go in and surf for things that I'm interested in, or email. (Pointing to another participant.)

Sue: I'm quite computer literate, but I just finished my Masters of Science thesis. So you have to be literate. It forced me to. I wasn't before.

5. What makes a Web site useful?

Beth: I think, like I said before, something with really good links, or the Home page has to have the best keywords so you don't spend all this time searching through various links to really find what you're after.

Marie: A site map helps too.

Marie: An easy way to get back to the Home page. Sometimes you have to scroll down through tons and tons of the page before you can click back Home.

Marie: There's usually a link at the top of the screen.

Beth: When you think of it, I never thought of it before, but in response to your question, I use the Internet for almost everything: communicating, doing my banking, looking for what's on television tonight. I don't get the newspaper anymore. I go to the journal site anyway, I, it's a long story, it's just easier and more cost efficient. I communicate with my sister almost all the time on the Internet. If I see an article that my family should know, I copy it to all of my brothers and sisters that are on the Internet. I teach on it. I do my documents and my business.

Personal Web Site Creation

1. Have you ever wished that you could create your own personal Web site?

Sue: I've never thought about that. We do have a team Web site. It could be improved upon. My kids have Web sites. It makes me realize that it's probably an easy thing to do. It's just that they are immersed in the Internet society far more than we are.
(Pause) So I have a feeling that it's easy.

2. What would you use your Web site for?

Anna: I've thought about it, having a personal Web site. But I thought it was so hard, I sort of had that barrier in my mind about actually taking that next step.

Beth: Personal Web site, what would be the goal of having a personal Web site?

Marie: I can't imagine.

Beth: I think that if I traveled around the world on a sail boat like my brother in law did, or climbed Mount Everest, and wanted to share sort of my personal journey, and the fight through the obstacles, I might put something like that on. (General laughter)

2.1 If you could easily, quickly, create your own Web site, would you?

Anna: It could be - if there is something particularly inspiring. I would do that kind of stuff - to share with my family, anyway.

2.2 Is email easy enough right now?

Sue: That's what I was thinking.

Marie: I don't know the potential of that, haven't experienced it, so.

On-line Task Systems

Now imagine that you have access to a Web site that provides resources and community support to women who have been diagnosed with breast cancer.

0. Have any of you accessed Web sites that are breast cancer specific?

(Everyone nods)

Sue: Canadian Breast Cancer Foundation, Canadian Breast Cancer Initiative - which coordinates all the research across Canada on breast cancer.

Beth: The other way that I search, is I type in keywords, and see what comes up, but I can't remember everything but if you type in www.(), for instance, you get tons of stuff showing up. So I think people will take where they're at, in terms of their diagnosis and treatment, and plug in keywords and just do a search and from there start reading through. I found a lot of information that way. Some of them you just toss, while others you wanna go over. And that may be useful on a site, maybe the top 10: top 10 site for this, top 10 for this or that. That would have been really helpful. Cause every woman is at a different stage, perhaps, of their breast cancer diagnosis, treatment, recovery, what ever it is. ()

Sue: And you want sites that you know the information is accurate, and you have to be really careful with that.

Marie: Like what Beth said about new research coming up, that is something I would go to right now, they are coming out with the whole signal generation of protocol treatments and drugs, to see what they're doing. So that may be a neat thing to have.

Beth: You're talking about a whole menu of things on the site, all the common topics that women would face.

Anna: And you may want to visit some inspirational Web sites. And you may want technical information, drug information, research information.

Marie: Support.

Sue: Exercise.

0.1 What kind of information have you looked for?

Marie: Medical information.

Anna: Valid, peer reviewed medical information.

Sue: That was kind of the first thing I searched for. Once you figured out what kind of treatment you were looking at, you would go back and, I did at least, look more specifically at drug information, side effects,

(Chorus of voices supporting what Sue is saying)

Marie: and the radiation.

Sue: Searching and researching.

0.2 Any kind that you looked at, but not quite as much?

Sue: I didn't personally, but I know a lot of people who turned to alternative medicine. Actually I was asking while driving home, knowing that I was coming here, what do you look for in a Web site? They didn't know why (*I was asking*), that was one of the comments, was alternative treatments. They were looking at holistic stuff too, like vitamins, and boosting your immune system, those kinds of Web sites - as a compliment to the medical info and research. Reiki. Whether or not they, I don't know if they're actually using that, but it's something they look for. I think lots of people do,

Anna: I do too. (*Pause*) I like to read people's stories too - as to draw comparisons to my own. (*Murmurs of agreement*) How their families dealt with it, how they pulled themselves out cause it was of bad time.

Marie: There's very little out there for spouses, or children.

Anna: And the good thing is too, that you can go to the computer immediately, where you may not be in the position to go to the library, right away, if you're feeling down (*general agreement*), or if you got to learn something.

Beth: That ease and access to a wide range of information.

Anna: What may be good too, is I had two in-laws that are nurses that sent me about eight reference books, they bought from Chapters, it would be good to have a link to, if you want to purchase a hard copy, factual information, then these are the best peer-reviewed books, and ones recommended by breast cancer people.() And I think that for some people, once they have those books in their hand, they can take the time to digest the information at their own speed. I am very thankful that I had these books sent to me, but I would have never found out about them otherwise.

1. What type of information would you like to find on such a Web site?

Sue: It's not something I would think of doing, because my story is not very remarkable.

Marie: But actually it is.

Sue: I know. (*General laughter*)

Anna: That's the problem. We don't realize.

Beth: I would be impressed to read that, not just me, but as part of one person in a group. (General agreement) (General laughter)

Sue: Look at how special I am. (General laughter)

Marie: Send donation to. (General laughter)

2. Would connecting with other women who have been diagnosed with breast cancer be important to you?

Marie: Obviously, since we are part of this group. We are a biased bunch.

2.1 What about over the Internet? Outside the Edmonton area?

Sue: I guess I do, or I have done. I went to New Zealand in March, and paddled with a team that's mostly members from Winnipeg, and all of the communication from last fall until we left in March, was mostly through email, and all the travel arrangements were made through email. So those women, some I had met and paddled, but some of them, the only way I ever knew them was through our communication we had over email. And I feel very close to the members I met who were in Australia, and we can communicate through email. We have photographs they took and we took, we shared, through photograph galleries. They have been very important to me. Certainly it's a wonderful way of getting to know people that we had never met face-to-face, and when you finally meet them it's like: I know all about you. (General laughter) So it is a great thing to communicate with and meet people who are in the same situation.

Beth: I think it's wonderful, just to go on what you were saying (), there may be somebody off in Inuvic or Baffin Island or something, who's going through a similar experience, and I think it would be neat to be able to communicate with those people, get them, they're isolated, to bring them into a group so that they are connected too. I think it's because of being a Breast Friends Member, you kind of think outside of yourself, and how you can help the community of them out there, that are struggling, what ever stage they're at in their struggle. And this is the ideal way to be able to reach hundreds and hundreds of women who may not have the ability to have face-to-face contact. It's really an important thing. (Common support)

Sue: You can help yourself when you help others. (Common support)

Marie: We're very fortunate to live in Edmonton, cause other women are very isolated.

Beth: A lot of the farmers are on the Internet now.

3. Can you think of any daily tasks that could be done on the Internet?

(Pause)

Anna: I think fun is always important. You've got games and quizzes, stuff like that. That's the key element I think. That would help - it doesn't always have to be educational. It's fun. (General laughter)

Marie: Dating.

5. Do you have any further comments?

END

E: FOCUS GROUPS AND SURVEY: FOCUS GROUP “A” ANALYSIS

1. How much of your typical day is spent using the Internet?

Anna: I’m on my computer all day long. I own my own private consulting business, and I do my work online, basically, doing projects, constructing educational programs within the health field, and emailing back and forth files, and searching for information, doing research in peer-reviewed journals, and through, because I have access to the University of Alberta here. I couldn’t do my work without the Internet.

Marie: I am on the Internet about an hour a day. Summer times when I don’t really spend a lot of time in doors. I would imagine in the winter I will spend more time.

Sue: As president of the Dragon Boat team I am using the Internet for email everyday. I try to limit it to an hour but it could be longer than that and the executive communicates a lot by email and also sending letters and information to all members, by email. We find that the best way to communicate. Most of our members are using the Internet, and it seems that the information gets delivered better that way than for those who get it by telephone. And when I was teaching we also had an email system (), and we even had to take attendance over the Internet, email to the office, and all the messages that were sent by the administration and between schools was communicated by email.

Beth: I use email to communicate with our group, with our family. I’m on it twenty minutes to half an hour a day. I use it at work a lot, for research. I have a consulting business as well, so we do a lot of Web searches for groups that will increase our market. I have my own Web page at work. I search for a lot of Web things. On a personal level, if we’re going to, say for instance plan a trip, or purchase something so we would go and do a search. So we bookmark a lot of favorites. And sometimes we go and look at those.

1.1 Do you use chat programs at all?

Beth: My daughter. (General laughter) I have a little bit.

2. What do you like about the Internet?

Sue: The wealth of knowledge. If you wanna know something, you can find it.

Anna: I like visual images. You can actually see it. And I like seeing views of things. You know how you can turn things? (I nod)

Beth: I like the way that you can communicate with people across the world that otherwise is difficult if not impossible. And to be able to do it in other time zones so that, I guess it's the idea of, what do you call it, asynchronous communication, where you're actually sending messages at your time, best time, and they can respond at their best time.

3. What kinds of things do you dislike about the Internet?

Sue: Junk mail and spam. That's a huge problem for us at work.

Beth: The amount of time that it can take. You can sit down and think you will be finished in twenty minutes but it takes up the rest of your day. And I find that if I'm not checking my email everyday, that in a couple of days it can get up to thirty messages. (email overload) Some of them you just have to get rid of, it's *overload*. (Pause) Sometimes I get frustrated if I'm in a site and I go to a link that I think is the right place to go and it's not and I'm constantly going clicking on links and you're just being bounced around. It's almost like being on a phone call: do you want this, press 1, do you want that, press 2. And it can take five minutes before you actually physically talk to someone. And it's the same thing with email - if it's not a good linked site, and doesn't have good info on its Home page it can be, you know, you can get lost in there. (Pause) Or you can go in and find something once, but to go in and find it again, you have to put it in your favorites. (General laughter)

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Sue: I am something of a neophyte so I don't even know how to print PDF pages.

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Now imagine that you have access to a Web site that provides resources and community support to women who have been diagnosed with breast cancer.

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(Everyone nods)

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Anna: Valid, peer reviewed medical information.

Sue: That was kind of the first thing I searched for. Once you figured out what kind of treatment you were looking at, you would go back and, I did at least, look more specifically at drug information, side effects,

(Chorus of voices supporting what Sue is saying)

Marie: and the radiation.

Sue: Searching and researching.

0.2 Any kind that you looked at, but not quite as much?

Sue: I didn't personally, but I know a lot of people who turned to alternative medicine. Actually I was asking while driving home, knowing that I was coming here, what do you look for in a Web site? They didn't know why (I was asking), that was one of the comments, was alternative treatments. They were looking at holistic stuff too, like vitamins, and boosting your immune system, those kinds of Web sites - as a compliment to the medical info and research. Reiki. Whether or not they, I don't know if they're actually using that, but it's something they look for. I think lots of people do,

Anna: I do too. (Pause) I like to read people's stories too - as to draw comparisons to my own. (Murmurs of agreement) How their families dealt with it, how they pulled themselves out cause it was of bad time.

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Marie: But actually it is.

Sue: I know. (General laughter)

Anna: That's the problem. We don't realize.

Beth: I would be impressed to read that, not just me, but as part of one person in a group. (General agreement) (General laughter)

Sue: Look at how special I am. (General laughter)

Marie: Send donation to. (General laughter)

2. Would connecting with other women who have been diagnosed with breast cancer be important to you?

Marie: Obviously, since we are part of this group. We are a biased bunch

2.1 What about over the Internet? Outside the Edmonton area?

Sue: I guess I do, or I have done. I went to New Zealand in March, and paddled with a team that's mostly members from Winnipeg, and all of the communication from last fall until we left in March, was mostly through email, and all the travel arrangements were made through email. So those women, some I had met and paddled, but some of them, the only way I ever knew them was through our communication we had over email. And I feel very close to the members I met who were in Australia, and we can communicate through email. We have photographs they took and we took, we shared, through photograph galleries. They have been very important to me. Certainly it's a wonderful way of getting to know people that we had never met face-to-face, and when you finally meet them it's like: I know all about you. (General laughter) So it is a great thing to communicate with and meet people who are in the same situation.

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Sue: You can help yourself when you help others. (Common support)

Marie: We're very fortunate to live in Edmonton, cause other women are very isolated.

Beth: A lot of the farmers are on the Internet now.

3. Can you think of any daily tasks that could be done on the Internet?

(Pause)

Anna: I think fun is always important. You've got games and quizzes, stuff like that. That's the key element I think. That would help - it doesn't always have to be educational. It's fun. (General laughter)

Marie: Dating.

5. Do you have any further comments?

END

E: FOCUS GROUPS AND SURVEY: FOCUS GROUP "A" ANALYSIS BREAKDOWN

1. How much of your typical day is spent using the Internet?	- all day long - for email everett - an hour - twenty minutes to half an hour a day - I use it at work a lot
X. What do you use it for?	- I do my work online - doing projects, constructing educational programs - emailing - searching - doing research - I couldn't do my work without the Internet - sending letters and information to all members, by email - best way to communicate - most of our members are using the Internet - information gets delivered better that way - email to communicate with our group, with our family - research - I have my own Web page at work - I search for a lot of Web things - plan a trip, or purchase something - bookmark a lot of favorites
1.1 Do you use chat programs at all?	- I have a little bit
2. What do you like about the Internet?	- wear a lot of clothes - visual images - I like seeing views of things - communicate with people across the world ... in other time zones - asynchronous communication
3. What kinds of things do you dislike about the Internet?	- junk mail and spam - amount of time that it can take - email overload - junk mail - I get frustrated if I'm in a site and I go to a link that I think it's the right place to go (and it isn't) - you can go in and find something once, but to go in and find it again, you have to put it in your favorites

4. What do you wish you could do on the Internet that you can't do now?	- I don't even know how to paint on it - a whiteboard - you can actually do the text as well as the visual drawing on it - get really interactive - on the more artistic side, with drawings and things
4.1 Do you do anything that has to do with shopping, communicating with others, banking or paying bills?	- it's pretty easy right now. Not so easy at home (Banking) (2 out of 4 bank online) - I'm quite computer literate - I use the Internet for almost everything: communicating, doing my banking, looking for what's on television tonight. I don't get the newspaper anymore. - I communicate with my sister almost all the time on the Internet - if I see an article that my family should know, I copy it to all of my brothers and sisters that are on the Internet - I teach on it - I do my documents and my business.
5. What makes a Web site useful?	- really good links - home page has to have the best keywords
Personal Web Site Creation	
1. Have you ever wished that you could create your own personal Web site?	- I've never thought about that
2. What would you use your Web site for?	- I thought it was so hard - what would be the goal of having a personal Web site? - I think that if I ... wanted to share sort of my personal journey ... I might put something like that on
2.1 If you could easily, quickly, create your own Web site, would you?	- It could be - if there is something particularly inspiring. I would do that kind of stuff - to share with my family.
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0. Have any of you accessed Web sites that are breast cancer specific?	(everyone nods) - Canadian Breast Cancer Foundation - Canadian Breast Cancer Initiative you want sites that you know the info is correct ... you want to be really careful with that exercise - I type in keywords, and see what comes up - Some of them you just toss, while others you want go over. And that may be useful on a site, maybe the top 10 ... That would have been really helpful. Cause every woman is at a different stage, perhaps, of their breast cancer diagnosis, treatment, recovery, what ever it is. - all the common topics that women would face ... - inspirational Web sites - technical information, drug information, research information
0.1 What kind of information have you looked for?	... - valid, peer reviewed medical information - that was kind of the first thing I searched for - once you figured out what kind of treatment you were looking at ... would go back and ... look more specifically at drug information ... effects (Chorus of support) - searching and researching.

0.2 Any kind that you looked at, but not quite as much?	- I didn't personally, but I know a lot of people who turned to alternative medicine - holistic stuff - vitamins - boosting your immune system - Reiki - I do too - I like to read people's stories too - how their families dealt with it - how they pulled themselves out cause it was of bad time - you can go to the computer immediately, where you may not be in the position to go to the library, right away, if you're feeling down (general agreement), or if you got to learn something. - that ease and access to a wide range of information (re. recommending resources to other women)
1. What type of information would you like to find on such a Web site?	- it's not something I would think of doing. very remarkable. - That's the problem. We don't realize. - I would be impressed to read that
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5. Do you have any further comments?	

E: FOCUS GROUPS AND SURVEY: FOCUS GROUP “A” ANALYSIS SYNTHESIS

1. How much of your typical day is spent using the Internet?	Internet use varied, but all women used it for at least an hour each day.
X. What do you use it for?	The kind of work that they did on the Internet varied; from work-related projects such as constructing educational programs, communicating, and searching for information, to personal tasks such as communicating with friends and family, planning trips, and shopping. “I couldn’t do my work without the Internet.” “Information gets delivered better that way.”
1.1 Do you use chat programs at all?	Only one person used chat programs, a little bit.
2. What do you like about the Internet?	The women enjoyed three primary things about the Internet: the wealth of knowledge that it made available to them, images and visual representations of objects that supplemented or substituted textual information, and asynchronous communication.
3. What kinds of things do you dislike about the Internet?	Complaints about the Internet surrounded three primary areas: receiving unwanted junk mail and spam, spending too much valuable time surfing the Web, and getting lost or misled while looking for information.
4. What do you wish you could do on the Internet that you can’t do now?	One woman wanted to be able to get really interactive with other people on the Web – becoming more collaborative and artistic through text and drawing.
4.1 Do you do anything that has to do with shopping, communicating with others, banking or paying bills?	One of the women was fairly computer illiterate, while the others considered themselves quite literate. They communicated, banked, conducted business, and read news online. For the most part, they considered all these activities easier to do online than analogously. “I use the Internet for almost everything; communicating, doing my banking, looking for what’s on television tonight. I don’t get the newspaper anymore.” “If I see an article that my family should know, I copy it to all of my brothers and sisters that are on the Internet.”
5. What makes a Web site useful?	Suggestion on what would make a site useful focused on ease-of-use through clear navigation. This is the same finding as in Focus Group B.

Personal Web Site Creation	
1. Have you ever wished that you could create your own personal Web site?	No one had.
2. What would you use your Web site for?	Overall, the women were unclear on what a personal Web site could be used for – why it would be a benefit to them and to others.
2.1 If you could easily, quickly, create your own Web site, would you?	One woman thought that she might be interested in creating a personal Web site, if she thought that she had something particularly inspiring to share with her family and friends.
2.2 Is email easy enough right now?	"I don't know the potential of that, haven't experienced it."
On-line Task Systems Now imagine that you have access to a Web site that provides resources and community support to women who have been diagnosed with breast cancer.	
0. Have any of you accessed Web sites that are breast cancer specific?	Every one of the women had previously accessed Web sites that had information pertaining to breast cancer. Some looked at specific sites that had been recommended to them by others (Canadian Breast Cancer Foundation and the Canadian Breast Cancer Initiative), while others typed in keywords into a search engine. Helpful suggestions were brought up for the design of a breast-cancer-specific Web site. The users would need to feel that the information they were accessing was accurate and reliable. The women suggested few specific types of content: exercise information, top 10s, all the common topics that women would face, newest research, emotional support, inspirational content, and technical and drug information. "Cause every woman is at a different stage, perhaps, of their breast cancer diagnosis, treatment, recovery, what ever it is."
0.1 What kind of information have you looked for?	These women, during the course of their illness, searched for valid, peer reviewed medical information, including specific information regarding treatments and side effects.
0.2 Any kind that you looked at, but not quite as much?	They also searched for information regarding holistic treatments, vitamins, and immune system boosters. They enjoyed reading other people's stories about how they and their families dealt with the illness. "You can go to the computer immediately, where you may not be in the position to go to the library, right away, if you're feeling down, or if you got to learn something."

1. What type of information would you like to find on such a Web site?	They had a fairly lengthy discussion regarding their own stories. One woman said that hers wasn't particularly remarkable. The other women strongly disagreed, eventually coming to the conclusion that the main problem is that women who have been through this kind of experience often don't realize how remarkable they are, and how helpful sharing their experiences would be for other women. "I would be impressed to read that."
2. Would connecting with other women who have been diagnosed with breast cancer be important to you?	Since these women were already part of a support network, they were biased towards this particular question.
2.1 What about over the Internet? Outside the Edmonton area?	They felt that the Internet offered a great opportunity to connect with other women, with similar experiences, from across the world. In the past, one woman communicated with women in New Zealand, sharing photographs through a communal photo gallery. Some women felt that other women were not as lucky as to have physical access to a support group. These women would benefit from having access to an on-line support network. "It is a great thing to connect with people who are in the same situation. You can help each other." "I think it would be neat to be able to communicate with those people, get them, they're isolated, to bring them into a group so that they are connected too." "You kind of think outside of yourself, and how you can help the community of them out there that are struggling, whatever stage they're at in their struggle. And this is the ideal way to be able to reach hundreds and hundreds of women who may not have the ability to have face-to-face contact."
3. Can you think of any daily tasks that could be done on the Internet?	Suggestions centered on fun activities such as games, quizzes, and dating.

E: FOCUS GROUPS AND SURVEY: FOCUS GROUP “B” TRANSCRIPT

- 55 min: July 15, 2003
- Five female participants, between the ages of 35 and 50, without breast cancer

Introduction

See Focus Group Opening Statement

General Internet Use

1. How much of your typical day is spent using the Internet?

Cathy: A day doesn't go by when I don't use the Internet for something, if it's not communication through email, then I see a site for something that I am interested in. At least once a day. The rest revolves around activities, if we want to see a movie, then we go to the rotten tomatoes site, to see if it stunk.

1.1 What other activities can you think of, Cathy?

Cathy: Definitely banking. Anything to do with the government. Rather than going to an actual office. Those are downtown. (.)

Linda: I don't use the Internet much at all, I have my morning ritual where there's a breast cancer site and a hunger site where you click and they donate towards, so that's the only thing I do religiously – I go everyday and click, so all these companies donate to child poverty and such.

Karen: Yah, banking, paying bills, looking up anything information wise, it's better than going to the library, and looking through a bunch of books, and getting also getting books from the library too.

Ruth: I usually click on everyday at work, for a break. *During the breaks, right?* – *Karen* (General laughter) I have a lot of favorites under bookmarks. And I use them for, like, making plane reservations, and when my dog had lice, dare I say that too, there's really good Web sites from vets, I learned to bake a salmon, looked at recipes. I think it almost can replace all the books and magazines that we buy. I think it's terrific.

Linda: News too.

Ruth: News yes. (General agreement)

Cathy: If you want a quick answer to something, it's the best place to look.

Karen: If you're starting to research, like last year I took an English course, and if you just want a general idea about something, so you know where to start. I don't tend to use Web sites for research much. I guess I just don't trust them that much yet, but just for a very basic simple answer.

Gini: Specially if you want health information. For example, if you, let's take something near to my anemic heart, if you need to know what an excellent source of iron is, you can ask *Google* how much iron there is in a pound of yams, and you can read a couple of the answers, and they will be in the same ballpark. I wouldn't have the same faith in asking questions about is it better to take chemotherapy or (), any time you get into too deep of an answer, you can be pretty sure that it's impossible to check. But for shallow anything, yes no, bake salmon for twenty minutes.

Linda: It's an initial starting place. Like when my son was diagnosed with scoliosis, I didn't know what all that entails, so I got on the Internet. You can build up your information and at least know what to ask.

Karen: You won't know the treatment necessarily but the questions.

Linda: To find out more about it.

Ruth: A lot of these Web sites have question and answers, so you get to see other people's questions and answers, which I really think is quite fun.

Cathy: I think the calculators help. When I was dieting, you can say: here's what I ate today, so there's probably 100 calories, probably 100 grams of fat. Here's the complete listing of everything. (General laughter)

Gini: And my horoscope says that I should have a child born in the year of the dragon, who should be a Leo, when do I have to get pregnant? (General laughter)

Cathy: Price checking too. ()

Gini: () And you have the Bank of Canada saying exactly what the exchange rate is today.

Cathy: ()

2. What do you like about the Internet?

Linda: That you can find almost anything on it.

Cathy: And you get past a lot of the gate keepers. Scoliosis runs in the family, and

my son has () syndrome, and I know if I go to the doctor I will have to wait an hour and forty-five minutes, and then he will treat me like I'm an idiot, and then he won't understand the question cause he's not listening to me, and then he'll tell me it's all in my head. But I can go out on the Internet and there's all these papers, and I can even get access to papers from the journals of childhood psychiatry that are very very specific and very academic, so that by the time I was dealing with the professionals, I felt more aware cause I read what you've read. And I don't have to go through the secretary and the nurse. (Pause) Or have you ever tried to ask a real scientist anything, specially imagine a physicist, my god, it's impossible.

Gini: Why would you? (General laughter)

Cathy: My friend's dada was a physicist, and his first response to a question was: Why are you so stupid, that you already don't know the answer? And you just don't have to be intimidated when you're on the Internet.

3. What kinds of things do you dislike about the Internet?

Cathy: Pop-up windows.

Ruth: They're always trying to sell you something.

Gini: Slow loading pages with lots of graphics.

Linda: I know a lot of you do your banking online, but I don't like putting any kind of personal information. I don't. It's just too easy to steal somebody's identity, and go in and find out anything you want. That's one thing: I won't buy over the Internet. I won't do my banking over the Internet. I won't do anything of a personal nature, cause I just don't trust that it's confidential and people can't get to it.

Ruth: It's good to do your taxes that way.

Linda: You can do your taxes over the phone too, just as quickly, without divulging information over the Internet.

Gini: My brother claims that the best was to be secure on while shopping over the Internet, is to have a dedicated credit card that has a low limit. So you can afford to get a few hits on it. () (General laughter)

Cathy: I don't worry much about that cause the agony of dealing with financial institutions is a far greater inconvenience. But what I do worry now is that my kids are on the Internet, and I just don't think there's anyway of getting it into their heads,

you don't say whether you're a boy or a girl, you don't where you live, or the color your eyes are. I mean some of the better sites are pretty picky, but even there it's largely the users themselves who patrol. And he's already had other users come up to him in a chat room and ask for his password. Hey, I will give you eighty-five neo-points for the neo-pets site if you tell me your password. ()

3.1 Anything else that's really obnoxious?

Ruth: I don't use mine at home very much cause it ties up my phone. (General laughter)

Cathy: I hate stupid navigation. I really hate that. Where they design the site on the basis that your customer is dying to spend money on your product, and if you want to know is the gelatin in Kraft marshmallows kosher, there's absolutely no way to find that out. Because they are only there to tell you what Kraft products you can buy and that's it.

4. What do you wish you could do on the Internet that you can't do now?

Cathy: Book a babysitter.

Gini: There's always a problem with the interface. I wish I could get, for example, at the library, I wish I could get right at the function with something that looks like a completely text-driven page, because sometimes the graphics are so advanced that you just want to jump out the window. But if you look at the () Web site, it's totally clean and there's not a lot of bells and whistles going on with only text coming back at you, but with the new interface at the library, you can pick these different things, but you still have to advanced search every time. I find that annoying. I wish that things were more text heavy ().

Cathy: I hate it when things change all the time. I just learned how to use the site and then they update it and take out all the useful stuff and have bigger graphics.

Gini: Cause they all think that everyone's got cable.

Cathy: And a monitor this big. (Indicates a large monitor with her hands in the air)

4.1 Since it has come up so many times, who here is on dial-up, who has a modem?

(2 have modems. 2 have no Internet at home. and 1 has high-speed)

4.2 What is the reason, for those of you who have modems, that you haven't switched to high speed?

Ruth: I don't have high speed at home, because when my son was at home he was on

the Internet a lot, and he would tie up the phone line. There were two of us that could actually be expecting calls; normally they were for him. And now, I'm nervous to use the computer because I may miss a call. So I've had a taste of both. When he was at home, we switched to the high speed because he was also doing some home schooling. So it's partially the price. It doesn't make sense for me to spend the extra money to get high speed. And I have other things to do. You can spend too much time on the Internet. Specially when you work on computers all day.

Gini: I agree with what you just said. I am also a bit of a cheapskate. I don't want to pay for bigger graphics. So it doesn't bother me that I don't have it. ()

Cathy: Having just moved into my new house, it was easier to get cable installed than another phone line; without having wires going every which way.

5. What makes a Web site useful?

Linda: Easy navigation. When you go in there and you can look at it and say OK that's what I want.

Cathy: And always a search box that will search the Web site. Because some times you're just like: I don't know what I want, but it's something about peaches, and it will look up everything. What drives me absolutely crazy is when they have a search box on the site and you type in your search and it kicks you out to *Google*.

Karen: Or something worse.

Task Driven Web Sites

1. Do you perform any life tasks on the Internet, such as on-line banking, paying bills, or shopping?

Karen: Online banking, paying bills, and I guess looking for recipes and just information, if that falls under that too. So that would be four things that I do.

Ruth: I don't do any of those, but what would you call doing your income tax?

Milena: That would be a task for sure.

Ruth: That's the only thing I do. What do you call reserving a book at the library?

Milena: That would be a task. Same thing as even buying a ticket online, that would be a task, you mentioned that you do that. That is definitely a task.

Ruth: Yes, I definitely do that.

Milena: Reserving something, buying something would be; as opposed to having to go out.

Ruth: So it's not looking for information, you're actually performing something that's a

Milena: As if you're doing it physically, actually getting into the car to do it. So instead of having to do it that way, now you can do it online.

Ruth: I guess I do.

Milena: Anyone else?

Linda: I don't do any of those things.

Cathy: You donate to charity, that's something. You don't have to write a cheque and go out. (General laughter) (I) I do all of that, and I buy things online too: furniture, because you can email the sellers and find out what it's like: does it creak when you sit on it. (General laughter) But like at IKEA, it's so much easier to go online rather than fight your way through the whole store, and get lost three times, and get run into by parents with four kids. (General laughter) Yeah, tickets for sure. Especially tickets for performances, because often they will show you what seats are left and where they are.

Ruth: I better research that one.

Cathy: It's really good.

Ruth: Especially when you know where you want to sit.

Cathy: Especially if it's in another city, where I don't know what the venues are like.

Gini: I don't do a lot of these things online, we already talked about that, but I do book things online. So tickets, I've done that. I check the availability of things. (I) So I've actually done that. But hearing you guys talking about this, it's probably because I am dragging my heels about the high speed access, because I just don't have the patience for. So let's take a random example that someone sends you a link that has some pictures of a party, and it takes for ever for it to load, for example. I soldier on if it's something important, but if it's the Amazon.com site or something like that I wouldn't do it. But my friend swears by ordering her groceries online.

Numerous: PicN'Del? PicN'Del.

Gini: She has a little baby, and so she feels like she's under house arrest, and she doesn't want to be logging things home with the baby. Rather than having to do it herself, nice, strong men bring boxes of food to her house and she doesn't even have to give them money for it. And she gets a big discount every time she refers her friends to them.

Cathy: I actually do my research online. For my thesis I probably did a third of my research online – easier than actually flying to the British Library. (General laughter)

Gini: But probably information is the key. I was going to say that, if you have a reliable, if you can see by the title of the site that it's reliable, you know if it's a recognizable periodical. It's just a pleasure to be able to search key words across, not just, say you're looking in Psychology Review, but you can do it across that way and across this way. (Indicates shallow and broad, and deep and narrow types of navigation) So you've got all these periodicals that you can have access to, and then you can be searching all of them at once. As long as you can set the parameters, and people don't get too cute with the pictures and with a text interface, you can really find stuff. And it just gives you a game plan of where to go. It's great.

Cathy: You know what else I do online? I'm amazed at this. I listen to the radio. Cause you can get all of these US radio stations, like the best jazz radio station on earth is in New Orleans and you can get them on the net. I just turn it on and listen to live blues online. (General laughter)

1.1 Do you use the Internet to communicate with other people? Through MSN or ICQ?

Linda: I've done that a few times.

Milena: So one person? Yes.

4. What about live chats? When you actually go to a Web site and people are talking in a window and you type. Chat rooms – anyone use those? (General laughter)

(No one)

Personal Web Site Creation

0. Does anyone have a personal Web site?

(One person has one)

1. Have you ever wished that you could create your own personal Web site?

Ruth: I don't know why I would want to create one.

Karen: It's fun. I've taken a couple of intro level courses. And we all had to create our own page, and I didn't really know what to do. Hmm, so just pick a hobby. But I can see it would have been more valid taking these courses if I had, say if I was a student and I had to create my own site, or if I had a project at work, seems that's what most people were there for. So it was more interesting if you had something.

Ruth: Or if you had an interest that you wanted to share with others.

Karen: Like if you were part of a club maybe.

Ruth: Or if you thought you were a specialist in something. I like scrap booking, and if I thought that I was really good at it then maybe. If it was of benefit to me and to others. But I don't have anything like that right now.

Linda: Nobody would go on my Web site. (General laughter) I go to work. I raise my kids. I go Home. I cook. I clean. I go back to work. It's the same old thing. Who wants to read about it?

Cathy: Yah, it's like I was told: You have to have a Web site. Everyone's going to be so thrilled (sarcasm) ra ra. Hi I'm () and this is my Web site. Bye.

Linda: These are my kids. These are my cats.

Cathy: Well, and you don't really want to put pictures of your kids on the Web.

Linda: Yah, so why have a Web site? (General laughter) My cats are safe, they don't go outside.

Milena: So is content the biggest barrier, would you say? (General agreement)

Ruth: Knowing how to. I found with the Internet too, that I sure had to learn a lot on my own. Surfing the net, I got confused about surfing at the beach and doing something with the net. I thought: what on earth is that?

Gini: The best sites, the only personal sites that I read are very project driven. So I would never go on: Hi, I'm (), this is what my cats look like and this is a great recipe for Gai Pan. But there are sites that I go to all the time to get song lyrics on them, for example, and such things. And I imagine that there are these little pasty faced people sitting in their basements and figuring out what the lyrics and cords are to Tom Waits songs so I can download them, how ever they do that. There's nothing that I know enough about to share. But I can imagine having some little project like that, as opposed to personal. Although I think that's good for people who, say, have moved across the country, away from their family and friends, and they have pictures, and this is what we were doing and that sort of thing. But the idea of a personal page is full of vanity, just to show that they can and that they have one of the great recipes, or travelogues, or something. (General laughter)

Now imagine that you can create your own Web site: a Web site where you can keep some things personal make other things public and shared with others.

1. Can you think of anything that you might enjoy doing or posting on such a Web site?

Cathy: If I could limit who came in, that would be fantastic. My parents are having their 50th wedding anniversary actually next month and we're scattered all over the place so we won't be able to get together. That would be so nice to make a Web site where you could post pictures and congratulations. (General agreement)

Linda: It was always my ... Both my kids have disabilities, and I have gone through an awful lot with doctors and institutions and all that you have to go through and I have had a plan once both my kids were adults, that I would write a book telling people how to get, where to go, how to talk to doctors, stuff like that, and it just dawned on me that I could probably do that on the Web, just to help people cut through some of the garbage that is out there. Cause just even dealing with doctors you want to pull your hair out. And I always though, well I could write something that shows a parent everything from what to look for when you think there might be something, to doctors, how to handle them.

Cathy: And the school system.

Linda: And I just always thought that would be useful, to save some parents a lot of aggravation. Yah, and you could put something like that on the Web.

Cathy: You know what I wish I could do on the Web? Have you ever been to the rotten tomatoes site? They collect all of the reviews about a movie, and anyone that comes

out, they interview them, and they give you a breakdown of what percent were positive and negative, they give it a rotten tomato or a red tomato depending on the response. So it's great. If you want to read the reviews you get an idea of what certain people thought, but you can also just click on it and see a number – ooo, that's probably good. I wish we could do that for so many things – like family doctors. I want a tomato-meter from patients who have gone to her and said: she's great I would go to her again; she's horrible, and I was complaining. And schools. Don't you wish when your kids go to school, that you could have a tomato-meter for them?

Gini: That's where your plan is great. I would love to see your Web site. I can just imagine – some text heavy, picture-less site. (General laughter) Some nice page that says: Schools – this is what (), this is something that will happen at the school. Or current research, current treatments. I would image that it would start with a dedicated parent like you, and then, that's the beauty of the Internet, that you don't have to commit to the whole thing. Somebody else can say: Yah, that's interesting, but you know what my daughter has? She has spinal diffida and it's similar but not the same, and I can see right around the doctor the different conditions that children are struggling with.

Linda: That would be the good thing about the Web; that you could put what you know on there and other people could actually go in and say: there's this too. Because it takes a lot to figure out where to go, who to see, who to call. If there was something there that people could keep adding to it: well try this and try that.

Gini: That's the Pollyanne side of my nature. While the Mr. Hide nature says that it ain't just five clicks. You do have to have a Web master, and you do have to monitor content because the next thing you know this wonderful system has the Arian Nations link. Cause the last Department that I worked in at the University, I redesigned their Web site. But you have to monitor it all the time. So that's why I like the idea, and there are sites out there that are just fabulous.

On-line Task Systems

Now imagine that you have access to a Web site that provides resources and community support to women on a topic that you are particularly interested in.

1. What type of information would you like to find on such a Web site?

Linda: I think one of the things is, access to information, that doesn't make you feel stupid. Yah, like something happens to you and it's out of the blue and you have no

idea what it or how to deal with it. A site that allows you to go in with a query and just find out as much as you can, without feeling stupid, you know?

Gini: What you would like is a bit of anonymity. What you'd like is a way to search through, as oppose to say: Dear know-it-all smarty-pants Web master, I'm an idiot, here's my question, your friend, Lola. You don't want that. You want to find it without having to commit yourself.

Linda: So that by the time that you commit yourself, you know something, you have some knowledge base behind you.

Cathy: Cause anonymity like that is a huge, it can be a real boom to searching things on the Internet. It can also be a way for you know some bad things to happen, but it can have its good aspects too. I agree with that.

Linda: I think one thing that would be really helpful would be, I was thinking of breast cancer and stuff, my girlfriend's mom was just diagnosed with it, and for people who have family around it's OK, but I think something really useful, anytime you're going through something out of the norm that comes up in your life, it's nice to talk to other people that have been there. And to make some kind of connection. I mean even if you don't know them, to feel that there is somebody else going through the same thing that you're going through, whether it's cancer, whether it's raising disabled kids, no matter what it is, because sometimes your friends can't, don't understand that. So a Web site where you could go to, like a chat room.

Ruth: A real support system.

Linda: Yah. Because some people, I imagine that if you have cancer you can't go out. And it would be nice to sit there and find that support group, and even when you're tied into the house for what ever reason you can have that support, get ideas.

Gini: I think it has to be driven by ease of navigation, basically good design. So, for example, if you've got some kind of cancer or breast cancer, it would be nice to have some kind of side bar of just keywords of basically things that could help like exercises for depression. All these things. And just seeing that, in a really easy view, and you say to yourself, if you're coming in and looking for that: Geez, I thought I was really depressed and here it is on the Splash page. (General agreement)

Gini: Fatigue is a great, huge thing that has become written about cancer. That has to be tackled. Cause they have really good chemotherapy, and that is working, but now you have to deal with fatigue. You don't know that until you get cancer. ()

Cathy: That's the thing, even when you don't want to go into a chat room, just to read other people's stories. I know that at my son's school, they are trying to get this anti-bully campaign, and there's this certain element in the parents who feel that it's healthy fun for boys, and what the school did, it went online and found parents' stories that were told by the parents who have had children seriously injured, or commit suicide, or even killed by the bully, and they put them up in the school.

Ruth: So what's to have references, like if you want some job done you can have a reference of people from that company. To me that would be one of the most useful things to have.

Cathy: Yah, cause the Better Business Bureau is not allowed to do that. In Calgary, they got sued, just for saying: well, we had a lot of complaints about this guy. And that's what I want.

Linda: The one thing that makes me weary about Web sites is how much information they want. So if I'm going to go to a Web site, and if they start wanting a lot of information, I'm going to back off, because my first reaction is that they want too much stuff. I would go to a Web site, like I do every morning, and I do my five little clicks and donate, they don't want any information and I think, especially on a Web site where you're dealing with something really personal with health issues and things like that. You want to know that it's real, that people are not trying to exploit you from that Web site. Especially if you're in a down spot like that, you want to feel safe going to something like that.

2. Would connecting with other women who are in a similar situation be important to you? (General agreement)

Karen: Depending on the subject, but a breast cancer site – definitely.

Cathy: When () was diagnosed, that only came about because I went on the Internet and there were all these parent groups saying basically: you are not crazy, there is something different about your kid, stick with it, keep at it.

Gini: That can be a catalyst too. For breast cancer, for example, you can say: we're having this support breast cancer volleyball tournament on July 12 in Calgary – these kinds of things. So you can actually make a connection.

Cathy: I suppose, there are survivor's directories for cancer.

Gini: Just to have a forum where you could put that stuff, if it's of interest. It doesn't mean you have to; it's just nice to have the option.

Linda: Well, that would be the nice thing about starting out on the Web – you don't have to show your face. And that's hard to do; I've done it in some parent support groups and there's a bunch of people and you're just ... it's hard, but on the Web you can, if you're having a really crappy day you can just let it rip, and nobody's, they could sit in judgment but you don't have to see their reaction. From there you can take it to a personal level.

Gini: Exactly – if there's some kind of therapy or some kind of exercises that are indicated for this group of children, you can pick and choose online. ()

Any additional comments?

Cathy: Are you seriously thinking of putting fun games on a cancer site? (yes) That's a great idea. What a stress reliever. (General agreement) (General laughter)

E: FOCUS GROUPS AND SURVEY: FOCUS GROUP “B” ANALYSIS

1. How much of your typical day is spent using the Internet?

hy: A day doesn't go by when I don't use the Internet for something, if it's not communication through email, then I see a site for something that I am interested in. At least once a day. The rest revolves around activities, if we want to see a movie, then we go to the rotten tomatoes site, to see if it stunk.

1.1 What other activities can you think of, Cathy?

Definitely banking. Anything to do with the government. Rather than going to an actual office. Those are downtown. ()

Linda: I don't use the Internet much at all, I have my morning ritual where there's a breast cancer site and a hunger site where you click and they donate towards, so that's the only thing I do religiously – I go everyday and click, so all these companies donate to child poverty and such.

Karen: Yah, banking, paying bills, looking up anything information wise, it's better than going to the library, and looking through a bunch of books, and getting also getting books from the library too.

Ruth: I usually click on everyday at work, for a break. *During the breaks, right?* – *Karen* (General laughter) I have a lot of favorites under bookmarks. And I use them for, like, making plane reservations, and when my dog had lice, dare I say that too, there's really good Web sites from vets, I learned to bake a salmon, looked at recipes. I think it almost can replace all the books and magazines that we buy. I think so.

Linda: News too.

Ruth: News yes. (General agreement)

hy: If you want a quick answer to something, it's the best place to look.

Karen: If you're starting to research, like last year I took an English course, and if you just want a general idea about something, so you know where to start. I don't tend to use Web sites for research much. I guess I just don't trust them that much yet, but just for a very basic simple answer.

Gini: Specially if you want health information. For example, if you, let's take something near to my anemic heart, if you need to know what an excellent source of iron is, you can ask *Google* how much iron there is in a pound of yams, and you can read a couple of the answers, and they will be in the same ballpark. I wouldn't have the

same faith in asking questions about is it better to take chemotherapy or (), any time you get into too deep of an answer, you can be pretty sure that it's impossible to check. But for shallow anything, yes no, bake salmon for twenty minutes.

Linda: It's an initial starting place. Like when my son was diagnosed with scoliosis, I didn't know what all that entails, so I got on the Internet. You can build up your information and at least know what to ask.

Karen: You won't know the treatment necessarily but the questions.

Linda: To find out more about it.

Ruth: A lot of these Web sites have question and answers, so you get to see other people's questions and answers, which I really think is quite fun.

I think the calculators help. When I was dieting, you can say: here's what I ate today, so there's probably 100 calories, probably 100 grams of fat. Here's the complete listing of everything. (General laughter)

Gini: And my horoscope says that I should have a child born in the year of the dragon, who should be a Leo, when do I have to get pregnant? (General laughter)

Carly: Price checking too. ()

Gini: () And you have the Bank of Canada saying exactly what the exchange rate is today.

Cathy: ()

2. What do you like about the Internet?

Linda: That you can find almost anything on it.

Cathy: And you get past a lot of the gate keepers. Scoliosis runs in the family, and my son has () syndrome, and I know if I go to the doctor I will have to wait an hour and forty-five minutes, and then he will treat me like I'm an idiot, and then he won't understand the question cause he's not listening to me, and then he'll tell me it's all in my head. But I can go out on the Internet and there's all these papers, and I can even get access to papers from the journals of childhood psychiatry that are very very specific and very academic, so that by the time I was dealing with the professionals, I felt more aware cause I read what you've read. And I don't have to go through the secretary and the nurse. (Pause) Or have you ever tried to ask a real scientist anything, specially imagine a physicist, my god, it's impossible.

Gini: Why would you? (General laughter)

My friend's dada was a physicist, and his first response to a question was: Why are you so stupid, that you already don't know the answer? And you just don't have to be intimidated when you're on the Internet.

3. What kinds of things do you dislike about the Internet?

Pop-up windows.

Ruth: They're always trying to sell you something

Gini: Slow loading pages with lots of graphics.

Linda: I know a lot of you do your banking online, but I don't like putting any kind of personal information. I don't. It's just too easy to steal somebody's identity, and go in and find out anything you want. That's one thing: I won't buy over the Internet. I won't do my banking over the Internet. I won't do anything of a personal nature, cause I just don't trust that it's confidential and people can't get to it.

Ruth: It's good to do your taxes that way.

Linda: You can do your taxes over the phone too, just as quickly, without divulging information over the Internet.

Gini: My brother claims that the best was to be secure on while shopping over the Internet, is to have a dedicated credit card that has a low limit. So you can afford to get a few hits on it. () (General laughter)

Cathy: I don't worry much about that cause the agony of dealing with financial institutions is a far greater inconvenience. But what I do worry now is that my kids are on the Internet, and I just don't think there's anyway of getting it into their heads, you don't say whether you're a boy or a girl, you don't where you live, or the color your eyes are. I mean some of the better sites are pretty picky, but even there it's largely the users themselves who patrol. And he's already had other users come up to him in a chat room and ask for his password. Hey, I will give you eighty-five neo-points for the neo-pets site if you tell me your password. ()

3.1 Anything else that's really obnoxious?

Ruth: I don't use mine at home very much cause it ties up my phone. (General laughter)

Cathy: I hate stupid navigation. I really hate that. Where they design the site on the basis that your customer is dying to spend money on your product, and if you want to know is the gelatin in Kraft marshmallows kosher, there's absolutely no way to find that out. Because they are only there to tell you what Kraft products you can buy and that's it.

4. What do you wish you could do on the Internet that you can't do now?

Cathy: Book a babysitter.

Gini: There's always a problem with the interface. I wish I could get, for example, at the library, I wish I could get right at the function with something that looks like a completely text-driven page, because sometimes the graphics are so advanced that you just want to jump out the window. But if you look at the () Web site, it's totally clean and there's not a lot of bells and whistles going on with only text coming back at you, but with the new interface at the library, you can pick these different things, but you still have to advanced search every time. I find that annoying. I wish that things were more text heavy ().

Cathy: I hate it when things change all the time. I just learned how to use the site and then they update it and take out all the useful stuff and have bigger graphics.

Gini: Cause they all think that everyone's got cable.

Cathy: And a monitor this big. (Indicates a large monitor with her hands in the air)

4.1 Since it has come up so many times, who here is on dial-up, who has a modem?

(2 have modems, 2 have no Internet at home, and 1 has high-speed)

4.2 What is the reason, for those of you who have modems, that you haven't switched to high speed?

Ruth: I don't have high speed at home, because when my son was at home he was on the Internet a lot, and he would tie up the phone line. There were two of us that could actually be expecting calls; normally they were for him. And now, I'm nervous to use the computer because I may miss a call. So I've had a taste of both. When he was at home, we switched to the high speed because he was also doing some home schooling. So it's partially the price. It doesn't make sense for me to spend the extra money to get high speed. And I have other things to do. You can spend too much time on the Internet. Especially when you work on computers all day.

Gini: I agree with what you just said. I am also a bit of a cheapskate. I don't want to pay for bigger graphics. So it doesn't bother me that I don't have it. ()

Cathy: Having just moved into my new house, it was easier to get cable installed than another phone line; without having wires going every which way.

5. What makes a Web site useful?

Linda: Easy navigation. When you go in there and you can look at it and say OK that's what I want.

Cathy: And always a search box that will search the Web site. Because some times you're just like: I don't know what I want, but it's something about peaches, and it will look up everything. What drives me absolutely crazy is when they have a search box on the site and you type in your search and it kicks you out to *Google*.

Karen: Or something worse.

Task Driven Web Sites

1. Do you perform any life tasks on the Internet, such as on-line banking, paying bills, or shopping?

Karen: Online banking, paying bills, and I guess looking for recipes and just information, if that falls under that too. So that would be four things that I do.

Ruth: I don't do any of those, but what would you call doing your income tax?

Milena: That would be a task for sure.

Ruth: That's the only thing I do. What do you call reserving a book at the library?

Milena: That would be a task. Same thing as even buying a ticket online, that would be a task, you mentioned that you do that. That is definitely a task.

Ruth: Yes, I definitely do that.

Milena: Reserving something, buying something would be; as opposed to having to go out.

Ruth: So it's not looking for information, you're actually performing something that's a

Milena: As if you're doing it physically, actually getting into the car to do it. So instead of having to do it that way, now you can do it online.

Ruth: I guess I do.

Milena: Anyone else?

Linda: I don't do any of those things.

Carly: You donate to charity, that's something. You don't have to write a cheque and go out. (General laughter) () I do all of that, and I buy things online too: furniture, because you can email the sellers and find out what it's like: does it creak when you sit on it. (General laughter) But like at IKEA, it's so much easier to go online rather than fight your way through the whole store, and get lost three times, and get run into by parents with four kids. (General laughter) Yeah, tickets for sure. Especially tickets for performances, because often they will show you what seats are left and where they are.

Ruth: I better research that one.

It's really good.

Ruth: Especially when you know where you want to sit.

Especially if it's in another city, where I don't know what the venues are like.

Gini: I don't do a lot of these things online, we already talked about that, but I do book things online. So tickets, I've done that. I check the availability of things. () So I've actually done that. But hearing you guys talking about this, it's probably because I am dragging my heels about the high speed access, because I just don't have the patience for. So let's take a random example that someone sends you a link that has some pictures of a party, and it takes for ever for it to load, for example. I soldier on if it's something important, but if it's the Amazon.com site or something like that I wouldn't do it. But my friend swears by ordering her groceries online.

Numerous: PicN'Del? PicN'Del.

Gini: She has a little baby, and so she feels like she's under house arrest, and she doesn't want to be logging things home with the baby. Rather than having to do it herself, nice, strong men bring boxes of food to her house and she doesn't even have to give them money for it. And she gets a big discount every time she refers her friends to them.

Carly: I actually do my research online. For my thesis I probably did a third of my research online – easier than actually flying to the British Library. (General laughter)

Gini: But probably information is the key. I was going to say that, if you have a reliable, if you can see by the title of the site that it's reliable, you know if it's a

recognizable periodical. It's just a pleasure to be able to search key words across, not just, say you're looking in Psychology Review, but you can do it across that way and across this way. (Indicates shallow and broad, and deep and narrow types of navigation) So you've got all these periodicals that you can have access to, and then you can be searching all of them at once. As long as you can set the parameters, and people don't get too cute with the pictures and with a text interface, you can really find stuff. And it just gives you a game plan of where to go. It's great.

Carly: You know what else I do online? I'm amazed at this. I listen to the radio. Cause you can get all of these US radio stations, like the best jazz radio station on earth is in New Orleans and you can get them on the net. I just turn it on and listen to live blues online. (General laughter)

1.1 Do you use the Internet to communicate with other people? Through MSN or ICQ?

Linda: I've done that a few times.

Milena: So one person? Yes.

4. What about live chats? When you actually go to a Web site and people are talking in a window and you type. Chat rooms – anyone use those? (General laughter)

(No one)

Personal Web Site Creation

0. Does anyone have a personal Web site? (One person has one)

1. Have you ever wished that you could create your own personal Web site?

Ruth: I don't know why I would want to create one.

Karen: It's fun. I've taken a couple of intro level courses. And we all had to create our own page, and I didn't really know what to do. Hmmm, so just pick a hobby. But I can see it would have been more valid taking these courses if I had, say if I was a student and I had to create my own site, or if I had a project at work, seems that's what most people were there for. So it was more interesting if you had something.

Ruth: Or if you had an interest that you wanted to share with others

Karen: Like if you were part of a club maybe.

Ruth: Or if you thought you were a specialist in something. I like scrap booking, and if I thought that I was really good at it **then maybe**. If it was of benefit to me and to others. **But** I don't have anything like that right now.

Linda: Nobody would go on my Web site. (General laughter) I go to work. I raise my kids. I go Home. I cook. I clean. I go back to work. It's the same old thing. Who wants to read about it?

Yah, it's like I was told: You have to have a Web site. Everyone's going to be so thrilled (sarcasm) ra ra. Hi I'm () and this is my Web site. Bye.

Linda: These are my kids. These are my cats.

Well, and you don't really want to put pictures of your kids on the Web.

Linda: Yah, so why have a Web site? (General laughter) My cats are safe, they don't go outside.

Milena: So is content the biggest barrier, would you say?

(General agreement)

Ruth: Knowing how to. I found with the Internet too, that I sure had to learn a lot on my own. Surfing the net, I got confused about surfing at the beach and doing something with the net. I thought: what on earth is that?

Gini: The best sites, the only personal sites that I read are very project driven. So I would never go on: Hi, I'm (), this is what my cats look like and this is a great recipe for Gai Pan. But there are sites that I go to all the time to get song lyrics on them, for example, and such things. And I imagine that there are these little pasty faced people sitting in their basements and figuring out what the lyrics and cords are to Tom Waits songs so I can download them, how ever they do that. There's nothing that I know enough about to share. But I can imagine having some little project like that, as opposed to personal. Although I think that's good for people who, say, have moved across the country, away from their family and friends, and they have pictures, and this is what we were doing and that sort of thing. But the idea of a personal page is full of vanity, just to show that they can and that they have one of the great recipes, or travelogues, or something. (General laughter)

Now imagine that you can create your own Web site: a Web site where you can keep some things personal make other things public and shared with others.

1. Can you think of anything that you might enjoy doing or posting on such a Web site?

Cathy: If I could limit who came in, that would be fantastic. My parents are having their 50th wedding anniversary actually next month and we're scattered all over the place so we won't be able to get together. That would be so nice to make a Web site where you could post pictures and congratulations. (General agreement)

Linda: It was always my ... Both my kids have disabilities, and I have gone through an awful lot with doctors and institutions and all that you have to go through and I have had a plan once both my kids were adults, that I would write a book telling people how to get, where to go, how to talk to doctors, stuff like that, and it just dawned on me that I could probably do that on the Web, just to help people cut through some of the garbage that is out there. Cause just even dealing with doctors you want to pull your hair out. And I always though, well I could write something that shows a parent everything from what to look for when you think there might be a problem with doctors, how to handle them.

And the school system.

Linda: And I just always thought that would be useful, to save some parents a lot of aggravation. Yah, and you could put something like that on the Web.

You know what I wish I could do on the Web? Have you ever been to the rotten tomatoes site? They collect all of the reviews about a movie, and anyone that comes out, they interview them, and they give you a breakdown of what percent were positive and negative, they give it a rotten tomato or a red tomato depending on the response. So it's great. If you want to read the reviews you get an idea of what certain people thought, but you can also just click on it and see a number – ooo, that's probably good. I wish we could do that for so many things – like family doctors. I want a tomato-meter from patients who have gone to her and said: she's great I would go to her again; she's horrible, and I was complaining. And schools. Don't you wish when your kids go to school, that you could have a tomato-meter for them?

Cathy: That's where your plan is great. I would love to see a Web site. I can just imagine – some text heavy, picture-less site. (General laughter) Some nice page that says: Schools – this is what (), this is something that will happen at the school. Or current research, current treatments. I would image that it would start with a dedicated parent like you, and then, that's the beauty of the Internet, that you don't have to commit to the whole thing. Somebody else can say: Yah, that's interesting, but

you know what my daughter has? She has spinal diffida and it's similar but not the same, and I can see right around the doctor the different conditions that children are struggling with.

Linda: That would be the good thing about the Web; that you could put what you know on there and other people could actually go in and say: there's this too. **Because it takes a lot to figure out where to go, who to see, who to call.** If there was something there that people could keep adding to it: well try this and try that.

Gini: That's the Pollyanne side of my nature. While the Mr. Hide nature says that it ain't just five clicks. You do have to have a Web master, and you do have to monitor content because the next thing you know this wonderful system has the Arian Nations link. Cause the last Department that I worked in at the University, I redesigned their Web site. But you have to monitor it all the time. So that's why I like the idea, and there are sites out there that are just fabulous.

On-line Task Systems

Now imagine that you have access to a Web site that provides resources and community support to women on a topic that you are particularly interested in.

1. What type of information would you like to find on such a Web site?

Linda: I think one of the things is, access to information, that doesn't make you feel stupid. Yah, like something happens to you and it's out of the blue and you have no idea what it or how to deal with it. A site that allows you to go in with a query and just find out as much as you can, without feeling stupid, you know?

Gini: What you would like is a bit of anonymity. What you'd like is a way to search through, as oppose to say: Dear know-it-all smarty-pants Web master, I'm an idiot, here's my question, your friend, Lola. You don't want that. You want to find it without having to commit yourself.

Linda: So that by the time that you commit yourself, you know something, you have some knowledge base behind you.

Gini: Cause anonymity like that is a huge, it can be a real boom to searching things on the Internet. It can also be a way for you know some bad things to happen, but it can have its good aspects too. I agree with that.

Linda: I think one thing that would be really helpful would be, I was thinking of breast cancer and stuff, my girlfriend's mom was just diagnosed with it, and for people

who have family around it's OK, but I think something really useful, anytime you're going through something out of the norm that comes up in your life, it's nice to talk to other people that have been there. And to make some kind of connection. I mean even if you don't know them, to feel that there is somebody else going through the same thing that you're going through, whether it's cancer, whether it's raising disabled kids, no matter what it is, because sometimes your friends can't, don't understand that. So a Web site where you could go to, like a chat room.

Ruth: A real support system.

Linda: Yah. Because some people, I imagine that if you have cancer you can't go out. And it would be nice to sit there and find that support group, and even when you're tied into the house for what ever reason you can have that support, get ideas.

Gini: I think it has to be driven by ease of navigation, basically good design. So, for example, if you've got some kind of cancer or breast cancer, it would be nice to have some kind of side bar of just keywords of basically things that could help like exercises for depression. All these things. And just seeing that, in a really easy view, and you say to yourself, if you're coming in and looking for that: Geez, I thought I was really depressed and here it is on the Splash page. (General agreement)

Carol: Fatigue is a great, huge thing that has become written about cancer. That has to be tackled. Cause they have really good chemotherapy, and that is working, but now you have to deal with fatigue. You don't know that until you get cancer. ()

Cathy: That's the thing, even when you don't want to go into a chat room, just to read other people's stories. I know that at my son's school, they are trying to get this anti-bully campaign, and there's this certain element in the parents who feel that it's healthy fun for boys, and what the school did, it went online and found parents' stories that were told by the parents who have had children seriously injured, or commit suicide, or even killed by the bully, and they put them up in the school.

Ruth: So what's to have references, like if you want some job done you can have a reference of people from that company. To me that would be one of the most useful things to have.

Yah, cause the Better Business Bureau is not allowed to do that. In Calgary, they got sued, just for saying: well, we had a lot of complaints about this guy. And that's what I want.

Linda: The one thing that makes me weary about Web sites is how much information they want. So if I'm going to go to a Web site, and if they start wanting a lot of information, I'm going to back off, because my first reaction is that they want too much stuff. I would go to a Web site, like I do every morning, and I do my five little clicks and donate, they don't want any information and I think, especially on a Web site where you're dealing with something really personal with health issues and things like that. You want to know that it's real, that people are not trying to exploit you from that Web site. Especially if you're in a down spot like that, you want to feel safe going to something like that.

2. Would connecting with other women who are in a similar situation be important to you? (General agreement)

Karen: Depending on the subject, but a breast cancer site – definitely.

Cathy: When () was diagnosed, that only came about because I went on the Internet and there were all these parent groups saying basically: you are not crazy, there is something different about your kid, stick with it, keep at it.

Gini: That can be a catalyst too. For breast cancer, for example, you can say: we're having this support breast cancer volleyball tournament on July 12 in Calgary – these kinds of things. So you can actually make a connection.

Carol: I suppose, there are survivor's directories for cancer.

Gini: Just to have a forum where you could put that stuff, if it's of interest. It doesn't mean you have to; it's just nice to have the option.

Linda: Well, that would be the nice thing about starting out on the Web, you don't have to show your face. And that's hard to do; I've done it in some parent support groups and there's a bunch of people and you're just ... it's hard, but on the Web you can, if you're having a really crappy day you can just let it rip, and nobody's, they could sit in judgment but you don't have to see their reaction. From there you can take it to a personal level.

Gini: Exactly – if there's some kind of therapy or some kind of exercises that are indicated for this group of children, you can pick and choose online. ()

Any additional comments?

Cathy: Are you seriously thinking of putting fun games on a cancer site? (yes) That's a great idea. What a stress reliever. (General agreement) (General laughter)

E: FOCUS GROUPS AND SURVEY: FOCUS GROUP “B” ANALYSIS SYNTHESIS

1. How much of your typical day is spent using the Internet?	One woman didn't use the Internet much at all, while the others used it a few times every day.
1.1 What other activities can you think of?	The women used the Internet for a variety of both personal and professional activities: banking, anything to do with the government, price checking, donating, reading the news, research, recipes, and health information. “I think it's terrific.” “You get to see other people's questions and answers.”
2. What do you like about the Internet?	They liked the Internet because of the wealth of information that it made available to them. It gave them the ability to get past “the gate keepers” to information without having to feel intimidated for asking “stupid questions.”
3. What kinds of things do you dislike about the Internet?	Complaints about the Internet surrounded four primary areas: pop-up windows, slow loading pages, selling tactics, and lack of security. A number of women didn't yet feel comfortable providing any personal or credit card information on-line.
3.1 Anything else that's really obnoxious?	They were quite frustrated by confusing navigation.
4. What do you wish you could do on the Internet that you can't do now?	One woman stated that she hates when Web pages are re-designed all the time, eliminating any of the knowledge that she had gained by surfing the site. Another woman was quite frustrated by graphics-heavy sites, because she had a slow Internet connection on her computer at home.
4.2 What is the reason, for those of you who have modems, that you haven't switched to high speed?	A number of women either had no Internet connection at home, or had a slow, modem connection. They stated high cost relative to low value as the main reason for not upgrading to high-speed Internet.
5. What makes a Web site useful?	Suggestion on what would make a site useful focused on ease-of-use through clear navigation. This is the same finding as in Focus Group A.

Task Driven Web Sites	
1. Do you perform any life tasks on the Internet, such as on-line banking, paying bills, or shopping?	These women performed a number of life tasks on-line: banking, paying bills, looking for recipes, doing taxes, reserving a book at the library, purchasing, and listening to the radio. One woman didn't do any of those things.
1.1 Do you use the Internet to communicate with other people? Through MSN or ICQ?	One woman used the Internet to communicate with other people through a person-to-person chat program.
4. What about live chats? When you actually go to a Web site and people are talking in a window and you type. Chat rooms – anyone use those?	None of the women used live chat.
Personal Web Site Creation	
0. Does anyone have a personal Web site?	One woman had a personal Web site.
1. Have you ever wished that you could create your own personal Web site?	Overall, the women were unclear on what a personal Web site could be used for – why it would be a benefit to them and to others. Some felt that if they had an interest or a hobby that might be of interest to others, then they would consider creating a personal site. They didn't feel confident that anyone would be interested in going to their site. They felt that knowing how to create a site was the secondary barrier. "There's nothing that I know enough about to share. But I can imagine having some little project like that, as opposed to <i>gossiping</i> ."
Now imagine that you can create your own Web site: a Web site where you can keep some things personal make other things public and shared with others.	

1. Can you think of anything that you might enjoy doing or posting on such a Web site?	One woman was interested in posting pictures and family announcements on such a site, only if she could limit who could access the information. Another woman always wanted to write a book telling parents how to get information about a particular childhood illness: where to go and how to talk to doctors; and it occurred to her, during the course of our discussion, that she could do that quite easily on the Web. She felt that the benefit to doing that on-line rather than in print was that other people could then share their own experiences with others. The other women were very supportive and excited about this idea. "I would image that it would start with a database of parents who had and then, that's the benefit of the Internet, that you can have a community of the whole thing. So mothers can say 'Oh, this is similar to my experience' or 'I've got this problem' and then they can find out that other people have the same problem and they can get advice from other people who have had children who are struggling with it."
On-line Task Systems Now imagine that you have access to a Web site that provides resources and community support to women on a topic that you are particularly interested in.	
1. What type of information would you like to find on such a Web site?	Access to information that didn't make you feel stupid, anonymity, and security were primary concerns. These women also wanted access to a support system comprised of real people that are dealing with, or have dealt with, similar issues. Specifically, they mentioned chat rooms, a side bar containing information about various topics, from exercise to depression and fatigue. "It's nice to talk to other people that have been there." "I imagine that if you have cancer you can't go out. And it would be nice to sit there and find that support group, and even when you're tied into the house for what ever reason you can have that support, get ideas." "It gives you the comfort of being able to ask questions and get answers."
2. Would connecting with other women who are in a similar situation be important to you?	They felt that connecting with other people in similar circumstances, especially when it came to such topics as breast cancer, would be very important. One woman shared her experience of trying to diagnose her son with an illness, and the support and information that she received from other parents over the Internet. "You can actually make a connection." "You don't have to show your face." "On the Web you can ... just let it rip."
Any additional comments?	Suggestions centered on stress relievers such as games and quizzes.

E: FOCUS GROUPS AND SURVEY: SURVEY “A” ANALYSIS

- July 14, 2003
- Four female participants, between the ages of 35 and 50
- Four answers from one survey had to be disqualified because either more than one answer was given, or a question was unanswered

	Very unlikely	Somewhat unlikely	Undecided	Somewhat likely	Very likely
1. Create your own Web page	XXX			X	
2. Meet and communicate with other women who are on the system				XXX	X
3. Keep a personal journal		X	X	XX	
4. Share journal entries with other women who are on the system	XX		XX		
5. Look for breast cancer information				X	XXX
6. Look for meal recipes		X	X	X	X
7. Shop for hair accessories	XX		X		X
8. Read news related to breast cancer	X				XXX
9. Take fun quizzes	XX				XX
10. Play games	X			X	XX
11. Send messages to other women				XX	XX
12. Send virtual gifts to other women		X		X	XX
13. Send cards to other women		X		X	XX
14. Share parts of your Web page with other women	XX				XX
15. Visit other personal Web pages	X	X			X

E: Focus groups and survey

16. Buy health products	X		X	XX	
17. Personalize your Web page with favorite images and/or colors	XX			X	X
18. Share your purchase choices with other women				XXX	
19. Create a wish list of items		X	X	X	X
20. Write reviews of articles	X			XX	X
21. Share photos		X		X	X
22. Place classified ads	X	X	XX		
23. Visit personal memorials	X			XX	X

Other (please list)

- treatment info
- alternative medicine info
- the primary focus at this “uneducated” time would be to interact with others for support, fun, info, and general personal growth
- chat rooms
- information about dragon boat teams for breast cancer survivors around the world

E: FOCUS GROUPS AND SURVEY: SURVEY “B” ANALYSIS

- July 15, 2003
- Five female participants, between the ages of 35 and 50, without breast cancer

	Very unlikely	Somewhat unlikely	Undecided	Somewhat likely	Very likely
1. Create your own Web page	X	X		XX	X
2. Meet and communicate with other women who are on the system				XXXX	X
3. Keep a personal journal			X	XXX	X
4. Share journal entries with other women who are on the system			XX	XXX	
5. Look for breast cancer information					XXXXX
6. Look for meal recipes		X		XX	XX
7. Shop for hair accessories		X		XXX	X
8. Read news related to breast cancer				X	XXXX
9. Take fun quizzes				XXXX	X
10. Play games		X	X	XX	X
11. Send messages to other women		X		X	XXX
12. Send virtual gifts to other women		X		XXX	X
13. Send cards to other women		X		XX	XX
14. Share parts of your Web page with other women		X	X	XX	X
15. Visit other personal Web pages			X	XXXX	

E: Focus groups and survey

16. Buy health products		X	XX	XX	
17. Personalize your Web page with favorite images and/or colors			XX	X	XX
18. Share your purchase choices with other women	X	XX	X	X	
19. Create a wish list of items	X	X	XX	X	
20. Write reviews of articles		XX	X	XX	
21. Share photos		XXXX		X	
22. Place classified ads	XX	X		XX	
23. Visit personal memorials	X	X		XX	X

Other (please list)

- make child care arrangements
- financial assistance
- homeopathic alternatives
- aides to daily living
- shop for make-up, maybe do a virtual makeover
- listen to music
- a weekly comic strip
- bra stuff
- maps
- doctors
- drug info
- reviews of various drugs/therapies by other women
- FAQ page
- share inspirational messages
- list comedy movies
- assistance for home/child care
- relaxation/meditation exercises
- "I think the key thing to focus on is you're not alone and your experience is not the first or only one. It's not the end of the world."
- organize/promote events (eg. races, sports tournaments, fundraisers)

E: FOCUS GROUPS AND SURVEY: COMBINED SURVEY ANALYSIS

- July 14 & 15, 2003
- Nine female participants, between the ages of 35 and 50, without breast cancer
- Four answers from one survey had to be disqualified because either more than one answer was given, or a question was unanswered

	Very unlikely	Somewhat unlikely	Undecided	Somewhat likely	Very likely
1. Create your own Web page	XXXX 44%	X 10%	0%	XXX 33%	X 10%
	56%				44%
2. Meet and communicate with other women who are on the system	0%	0%	0%	XXXXX XX 78%	XX 22%
	0%				100%
3. Keep a personal journal	0%	X 10%	XX 22%	XXXXX 56%	X 10%
	10%				67%
4. Share journal entries with other women who are on the system	XX 22%	0%	XXXX 44%	XXX 33%	0%
	22%				33%
5. Look for breast cancer information	0%	0%	0%	X 10%	XXXXX XXX 89%
	0%				100%
6. Look for meal recipes	0%	XX 22%	X 10%	XXX 33%	XXX 33%
	22%				67%

E: Focus groups and survey

7. Shop for hair accessories	XX 22%	X 10%	X 10%	XXX 33%	XX 22%
		33%			56%
8. Read news related to breast cancer	X 10%			X 10%	XXXXX XX 78%
		10%			89%
9. Take fun quizzes	XX 22%			XXXX 44%	XXX 33%
		22%			78%
10. Play games	X 10%	X 10%	X 10%	XXX 33%	XXX 33%
		22%			67%
11. Send messages to other women		X 10%		XXX 33%	XXXXX 56%
		10%			89%
12. Send virtual gifts to other women		XX 22%		XXXX 44%	XXX 33%
		22%			78%
13. Send cards to other women		XX 22%		XXX 33%	XXXX 44%
		22%			78%
14. Share parts of your Web page with other women	XX 22%	X 10%	X 10%	XX 22%	XXX 33%
		33%			56%
15. Visit other personal Web pages	X 10%	X 10%	X 10%	XXXX 44%	X 10%
		22%			56%

E: Focus groups and survey

16. Buy health products	X 10%	X 10%	XXX 33%	XXXXX 44%	0%
		22%			44%
17. Personalize your Web page with favorite images and/or colors	XX 22%	0%	XX 22%	XX 22%	XXX 33%
		22%			56%
18. Share your purchase choices with other women	X 10%	XX 22%	X 10%	XXXXX 44%	0%
		33%			44%
19. Create a wish list of items	X 10%	XX 22%	XXX 33%	XX 22%	X 10%
		33%			33%
20. Write reviews of articles	X 10%	XX 22%	X 10%	XXXXX 44%	X 10%
		33%			56%
21. Share photos	0%	XXXXXX 56%	0%	XX 22%	X 10%
		56%			33%
22. Place classified ads	XXX 33%	XX 22%	XX 22%	XX 22%	0%
		56%			22%
23. Visit personal memorials	XX 22%	X 10%	0%	XXXXX 44%	XX 22%
		33%			67%
TOTAL	26/12%	28/13%	23/11%	80/37%	54/26%

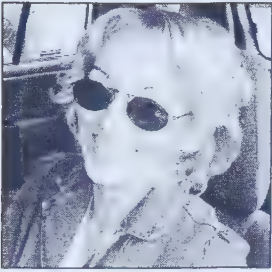
Other (please list)

- make child care arrangements
- financial assistance
- homeopathic alternatives
- aides to daily living
- shop for make-up, maybe do a virtual makeover
- listen to music
- a weekly comic strip
- bra stuff
- maps
- doctors
- drug info
- reviews of various drugs/therapies by other women
- FAQ page
- share inspirational messages
- list comedy movies
- assistance for home/child care
- relaxation/meditation exercises
- “I think the key thing to focus on is you’re not alone and your experience is not the first or only one. It’s not the end of the world.”
- organize/promote events (eg. races, sports tournaments, fundraisers)
- treatment info
- alternative medicine info
- the primary focus at this “uneducated” time would be to interact with others for support, fun, info, and general personal growth
- chat rooms
- information about dragon boat teams for breast cancer survivors around the world

G: TAXONOMY OF TASKS

	Task Categories					Benefits				
	Building communities	Looking for information	Using resources	Creative expression	Efficiency	Money saving	Selection	Fun	Privacy	Personal choice
Paying bills			X		X	X			X	X
Banking			X		X	X			X	X
Consulting with a professional	X		X		X	X	X	X	X	X
Meeting a friend	X		X		X	X		X		X
Going to the library		X	X		X	X	X	X	X	X
Keeping a journal				X				X		
Shopping			X		X		X		X	X
Creating a Web page	X			X				X		X
Sharing journal entries with other women	X			X				X		X
Looking for breast cancer information		X			X		X		X	X

Looking for meal recipes		X		X			X		X				X
Buying health products				X			X		X		X		X
Reading news related to breast cancer		X					X		X	X	X		X
Taking quizzes				X							X		
Playing games				X							X		
Sending gifts	X			X	X	X	X		X		X		X
Sending cards	X			X	X	X	X		X	X	X		X
Sharing your purchase choices	X					X					X		
Creating a wish list of items	X				X						X		
Writing reviews	X				X						X		X
Placing classified ads				X					X		X		X
Visiting personal memorials		X											X



HANNAH KAMINSKA

“Part of what makes me happy is that, because of my experience, I can be there as a support system for other women.”

Background

- 47 years old, in a common-law marriage
- Received a MA in Social Work from the U. of Warsaw, and a BA in Psychology from the U. of Toronto
- Works for a social service agency in Halifax, NS

Needs

- Ease-of-use
- Guidance
- Communication tools
- Wants to connect with other women who have been diagnosed with breast cancer

Attributes

- Busy
- Intermediate Internet user, has fast connection to a PC both at work and at home
- Uses email
- No previous experience with other forms of on-line communication

1 the connection seeker

PERSONAL PROFILE

When this survivor was diagnosed a decade ago, she felt she had no-one to lean on. Today, she helps fill that void for others.

Hannah moved to Canada with her daughter from her native Poland fifteen years ago. She learned English, received a BA in Psychology, to complement her Polish Master in Social Work degree, and eventually began working as a social worker. When she was diagnosed with breast cancer in 1993 at the age of 36, Hannah discovered that her Polish community was not there to offer support. And she only had her daughter as family support.

“Besides my daughter and friends, there was really no one for me to talk to,” says Hannah. “I was never taught to do regular self-exams. But one day, a little voice in my head told me to check my right side. I was lucky.”

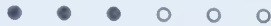
After consulting with her doctor, Hannah was sent to a surgeon, who ordered a mammogram. Although the results were inconclusive, Hannah discussed her options with her daughter and then opted for a lumpectomy. The procedure revealed that she had breast cancer. Despite the terrible news, she was optimistic. “When the doctors told me the results, I said, ‘I feel like everything’s going to be OK,’” she says.

Immediately after she was diagnosed with cancer, Hannah had her right breast removed, along with 18 lymph nodes. After the operation, a representative from the Canadian Cancer Society – also a breast cancer survivor – took the time to talk with Hannah. It was the first time she had actually met someone who had also battled the disease. “It made me realize that there were other people out there like me,” she says. “I had found a sisterhood of survivors that I very much wanted to be part of.”

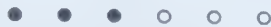
Despite having a full-time job as a child protection worker, Hannah participates in the Breast Cancer Walk every year. She’s always looking for ways to help other women deal with a breast cancer diagnosis.

“With breast cancer, you just cannot be negative. There’s still too much to live for, too much to be grateful for and happy about.”

COMPUTER EXPERIENCE



INTERNET EXPERIENCE





HANNAH KAMINSKA

SCENARIO 1

Because of her job, Hannah is aware of the isolation faced by many rural Maritime women. She wants to reach out, and make herself available as a source of information and support. However, also because of her work, anonymity is important to Hannah.

Needs

- Communication
- Security
- Anonymity

Features

- Synchronous and asynchronous communication tools
- Profile management

Behavior

Hannah signs in to her *My Health and Hope* page to participate in a scheduled chat between breast cancer survivors and women who have been recently diagnosed. She selects an avatar (name and icon) and joins in the discussion.

SCENARIO 2

Hannah enjoys staying fit and, since her recovery, she has become a daily runner. For the past five years she has participated in the Breast Cancer Walk and Run for the Cure. She wants to be aware of other similar events happening in her area. She enjoys these events because they give her the opportunity to connect with women from different parts of Nova Scotia, that she would not get to see otherwise.

Needs

- Information
- Communication

Features

- Events calendar, customizable by location and type of event
- Event posting and notification
- Photo-sharing

Behavior

Hannah signs-in to her *My Health and Hope* page and searches for all walking/running events scheduled for Nova Scotia. The search comes back with one event scheduled for May. She saves it in her calendar, and sends a message with a link to the event to her girlfriends.



SANDRA BILLINGTON

"I need to take charge of my treatment, my emotional and physical well-being."

Background

- 35 years old, married
- 4 children: ages 7 to 15
- Completed high school and a 1-year diploma
- Works, part-time, as a secretary, for a small firm in Guelph, ON

Needs

- Information
- Communication tools
- Wants up-to-date information regarding treatment options and research, holistic alternatives, and healthy cooking recipes
- Wants to talk to other women who have been recently diagnosed about how to talk to her kids about her illness

Attributes

- Busy
- Advanced Internet user, with a fast Internet connection
- Uses email and chat

2 the learner

PERSONAL PROFILE

This mother of four must make quick decisions on her course of treatment, while helping her children deal with the news.

In January 2003, Sandra (Sandy to her friends) Billington of Guelph, Ontario, recently completed a 1-year accountant's course and, after being a stay-at-home mom for fifteen years, started a part-time job as a secretary for a small accounting firm. Her first priority was balancing caring for her four children, whose ages at the time ranged from 7 to 15, and her new career.

In February, Sandy noticed a reddish-brown spot on the inside of her bra, the product of a discharge from her right nipple. "At first I didn't think anything of it," she recalls. But when Sandy's strange symptom kept recurring, she mentioned it to her mother, whose own mother and three aunts had battled breast cancer. "Mom ordered me to see a doctor... immediately."

It turns out that Sandy's symptom was a reason to be worried because the discharge was unilateral (coming from only one breast), persistent and reddish. A battery of tests was ordered right away to confirm a diagnosis.

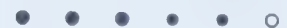
Since then, Sandy has undergone a mammogram, which led to a ductogram, a procedure that checks breast ducts for abnormalities. When the test results were inconclusive, Sandy's doctor ordered a biopsy, which finally yielded a diagnosis: ductal carcinoma. Her milk ducts were full of cancerous cells.

The following Monday, Sandy met with her doctor to discuss treatment options. He recommended a mastectomy of her right breast. "Some [other doctors] think I should have both breasts removed! I'm not sure what to do. And I have to make the decision so fast."

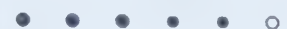
The hardest part of Sandy's ordeal has been telling her children about her diagnosis.

"After I stopped bawling, I told my oldest, Kate," she says. She hasn't yet given the news to her other children.

COMPUTER EXPERIENCE



INTERNET EXPERIENCE





SANDRA BILLINGTON

SCENARIO 1

Sandy needs to make quick decisions regarding the course of her treatment. She wants to get up-to-date, accurate, and reliable information and advice. She wants information specific to her type of cancer and stage of treatment, that she can print out and bring it to her doctor for discussion.

Needs

- Information
- Ways to manage, store and share information
- Faith in the credibility of the information

Features

- Up-to-date library
- Customization utilities
- Management utilities
- Association to an existing government, or social service agency

Behavior

Sandy needs to decide her course of treatment. She logs in to *My Health and Hope* and finds relevant statistics compiled by the National Alliance of Breast Cancer Organizations. She saves the information into *My Articles*.

SCENARIO 2

Sandy needs advice on how to tell her younger children, Jessica, Angela and Robert, about her diagnosis. She feels quite vulnerable right now, and would like personal advice from women who had to deal with a similar situation.

Needs

- Information
- Communication
- Support
- Security

Features

- Synchronous and asynchronous communication tools
- Profile management

Behavior

Sandy searches for survivors who have children. She reads Clara's profile, which states that she is a mother of two and a survivor. Sandy sends her a message. The next time Sandy is logged into the system, Clara suggests a person-to-person chat.



MARY-ANNE WHITE

“What I find most frustrating is how much I’ve had to rely on my friends to take care of my day-to-day life.”

Background

- 50 years old, single
- 2 grown children
- Completed high school
- For the last twenty years worked as manager of a Sears Outlet Store in Red Deer, AB

Needs

- Life-management tools
- Communication tools
- Wants to find ways to manage her life while focusing on her recovery

Attributes

- Low-energy
- Intermediate Internet user, with a fast connection
- Uses email regularly

3 *the transactor*

PERSONAL PROFILE

This independent and self-reliant grandmother wants to take charge of her day-to-day life.

Mary-Anne White, a grandmother of three, was standing in a grocery store checkout line when her cell phone rang. It was her pathologist, who had the results of her breast biopsy. “She said, ‘Is this a good time?’ So I stepped over to the flower department, thinking, If it’s bad news, at least I’m in a pleasant spot.” Unfortunately, it was bad news for the 50-year-old Sears Outlet Store manager from Red Deer, Alberta. The biopsy came back positive: Mary-Anne had breast cancer.

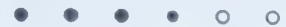
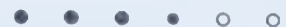
Mary-Anne calmly paid for her groceries, walked out of the store and returned to work. “It was surreal,” she says. “I sat down at my desk thinking, Did I really just hear that?”

With her two grown children living in other provinces, Mary-Anne relied on her friends as the main source of support. Two days before her mastectomy in early March, a group of her friends threw her a “Goodbye, Booby” party. “We had such a great time,” says Mary-Anne. “One of my friends wrote a poem, called ‘Ode to the Booby,’ and read it out loud. We took pictures that night and put them in an album, along with the poem and other mementos.”

Her daughter, Elizabeth, and her newborn flew up to be with Mary-Anne while she underwent surgery, and stayed for three weeks.

Thankfully, Mary-Anne finished her last chemotherapy session on September 1st, 2003. She is currently recovering from the treatments, eager to return to her active lifestyle. “What I find most frustrating is how much I’ve had to rely on my friends to take care of my day-to-day life management. Often I am too tired to go out grocery shopping or to do my banking.”

“I feel better already,” Mary-Anne says.
 “[So] now I’m looking toward to the future. I made a promise to myself that I’m going to be alive to watch my granddaughter get married. And I’m going to do all that I can to reach that goal.”

COMPUTER EXPERIENCE**INTERNET EXPERIENCE**

**MARY-ANNE WHITE****SCENARIO 1**

After her chemotherapy treatments, Mary-Anne lost most of her hair. It's slowly growing back, but she's starting to look forward to going back to work in a couple of weeks. She wants to buy a few quality affordable hair accessories and a wig for when she's ready to return to work.

Needs

- Selection
- Quality
- Affordable
- Delivery
- Security

Features

- Shopping for wigs and hair accessories
- Product description, picture, materials, manufacturer, and warranty
- Price in Canadian \$, shipping options
- Credit Card protection
- Information about security features

Behavior

Mary-Anne logs-in to *My Health and Hope*. She browses through the store, checking prices and products materials, and reading past-customer reviews. She purchases a wig and a head scarf through the one-click shopping feature.

SCENARIO 2

Mary-Anne wants to plan a few healthy meals for the rest of the week. She wants to choose recipes that are easy to create, and enriched with all the immune system enriching ingredients that she has been reading about.

Needs

- Information
- Selection
- Quality
- Affordable
- Delivery

Features

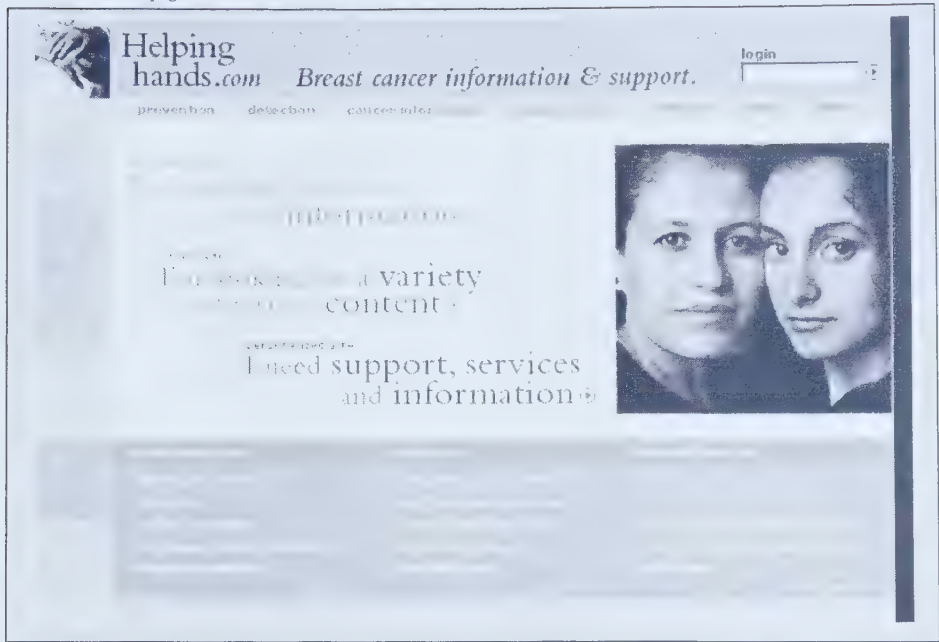
- Recipe centre attached to a local grocery store
- Product description, picture, and detailed ingredients list
- Same-day shipping

Behavior

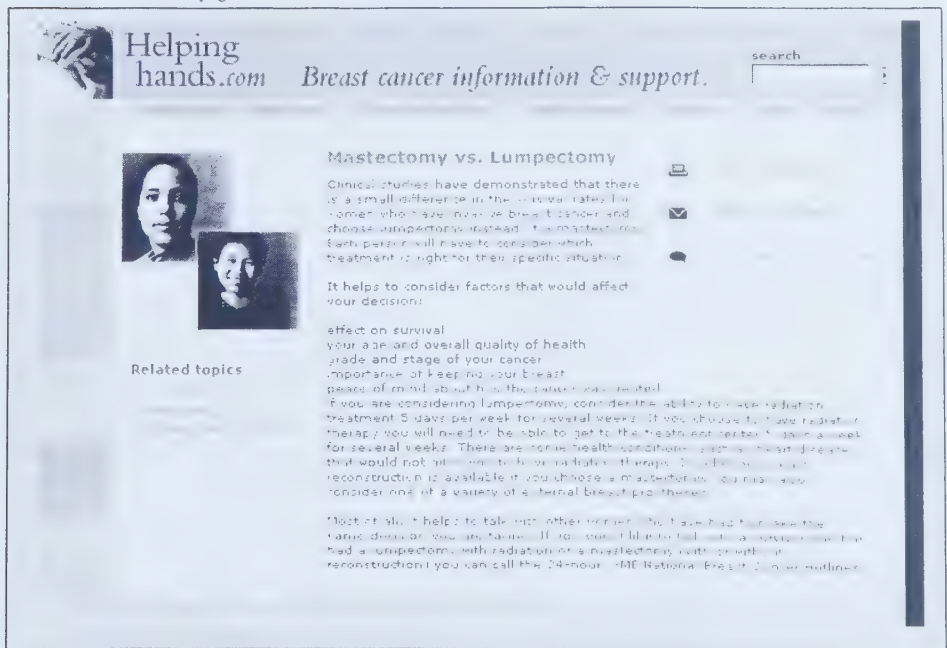
Mary-Anne browses through the *Recipe Centre* and selects five dinner recipes. She reviews the products listed in her shopping cart, and purchases the items that she does not have in her fridge. These will be delivered from the nearest grocery store later that day.

I: PROTOTYPE I

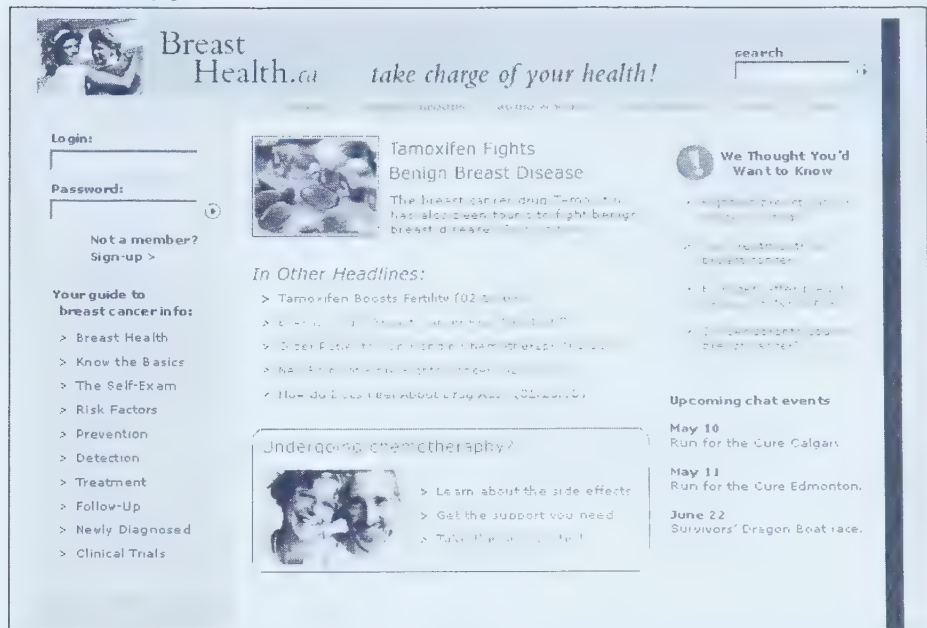
Home page



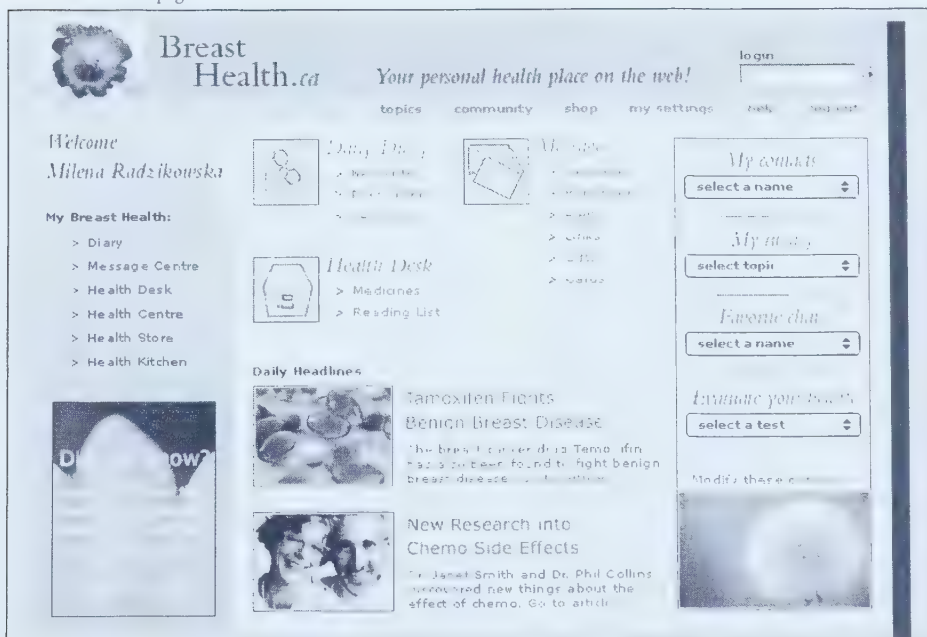
Information page



Portal page



Action page



J: PROTOTYPE II

Home page

**Helping hands.com** *The breast cancer information centre.*

search

I'm searching for breast cancer information @

a place that is simple to use with tools to find information chosen for you with care by healthcare professionals.

I'm looking for a variety of breast cancer content @

full of a large variety of information and resources that can be customized by you and distilled from a wide range of trusted healthcare sources.

I need a support community & a variety of information @

a place that is completely yours: full of customizable information, online community support groups, and fun activities that link you to a network of other individuals.



Information page

**Helping hands.com** *Breast cancer info at your fingertips.*

search

Cancer information:

- > **Breast Health**
- > Know the Basics
- > The Self-Exam
- > Risk Factors
- > Prevention
- > Detection
- > Treatment
- > Follow-Up
- > Newly Diagnosed
- > Clinical Trials

Breast Health

Cancer treatment may vary depending upon the type of cancer, the stage of cancer and the goal of treatment. Often, one or more treatment modalities may be used in order to provide the most complete treatment for the patient. Increasingly, it is common to use several treatment modalities concurrently or in sequence, with the goal of preventing both local and systemic recurrence. This is referred to as multi-modality treatment of the cancer. These modalities may include surgery, radiation therapy, chemotherapy and/or biological therapy.

Depending on the stage of cancer, one or more treatment modalities may be required to achieve the best results. Cancer treatments aim to prevent the cancer from spreading locally or requiring re-appearing at sites distant from the original location (metastasis). Cancer therapy may consist of one or more treatment modalities delivered concurrently or in sequence, including surgery, radiation, chemotherapy, and/or biologic therapy.

In addition, surgeons frequently remove the tissue adjacent to the cancer during surgical resection of a tumor.

likelihood of tumor recurrence and the need for other treatment modalities.

Find a support group:

City

Province

Related topics

- 
- 

100% 99% 98% 97% 96% 95% 94% 93% 92% 91% 90% 89% 88% 87% 86% 85% 84% 83% 82% 81% 80% 79% 78% 77% 76% 75% 74% 73% 72% 71% 70% 69% 68% 67% 66% 65% 64% 63% 62% 61% 60% 59% 58% 57% 56% 55% 54% 53% 52% 51% 50% 49% 48% 47% 46% 45% 44% 43% 42% 41% 40% 39% 38% 37% 36% 35% 34% 33% 32% 31% 30% 29% 28% 27% 26% 25% 24% 23% 22% 21% 20% 19% 18% 17% 16% 15% 14% 13% 12% 11% 10% 9% 8% 7% 6% 5% 4% 3% 2% 1% 0%

K: PROTOTYPE III

Home page



Health
Canada

Santé
Canada

Canada

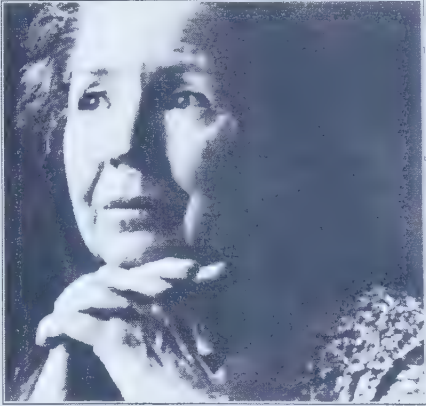


welcome to
My Health and Hope!

please sign in...

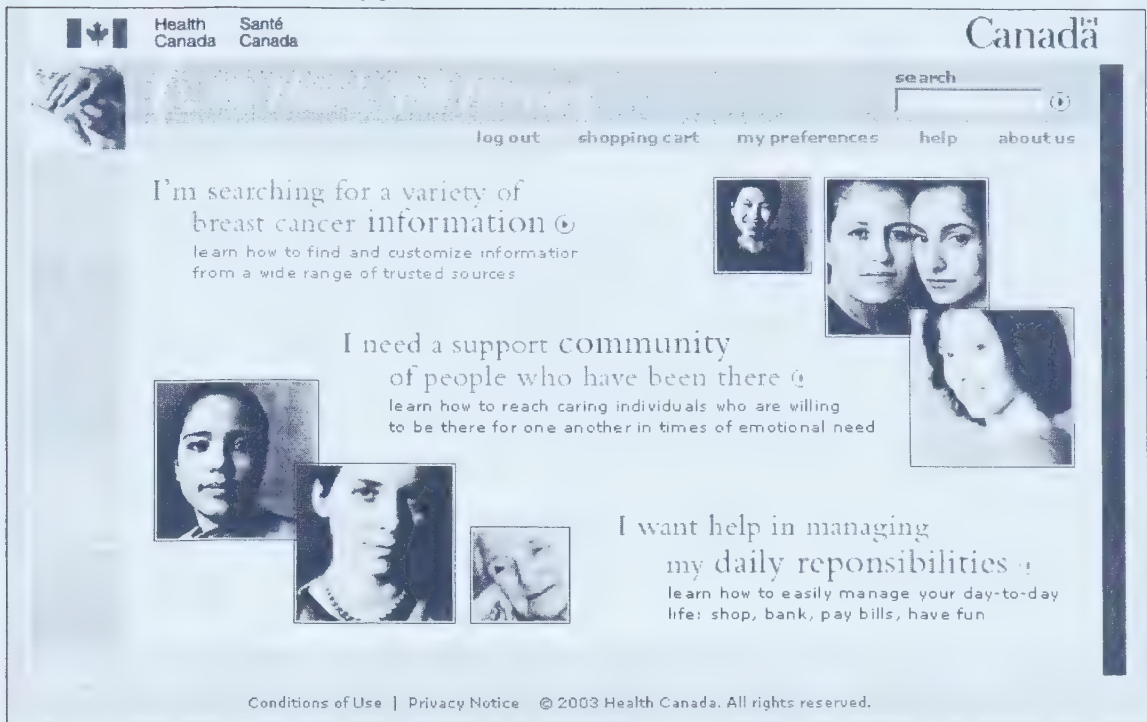
user name

password

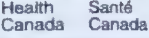


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First page



Hannah's home page




[log out](#)
[shopping cart](#)
[my preferences](#)
[help](#)
[about us](#)

Hannah's resources

- > Home
- > My chat
- > My day planner

Public resources

- > News
- > Library
- > White pages
- > Yellow pages
- > Healthy lifestyle
- > Life management
- > Fun online

My day planner



Diary

- > (9) private
- > (8) public



Messages

- > (14) messages
- > (2) gifts

< November 2003 >

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

My chat

My status: **Online**



Jenny: Yeah, I just found out yesterday. I just don't know how I'm going to tell my kids.



KittyCat: That was the hardest thing for me. Mine were 7 and 10 at the time, and it was so terrible ...





KittyCat: How old are your kids, Jenny?



Jenny: Adam is 4, Billy is 7, and Tommy is 9.



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Hannah's diary

**Health
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**Santé
Canada**





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Hannah's resources

- > Home
- > My chat
- > My day planner
 - > Diary
 - > Messages

Public resources

- > News
- > Library
- > White pages
- > Yellow pages
- > Healthy lifestyle
- > Life management
- > Fun online



My day planner: Diary

Here is the list of entries you made in your Diary. You can edit any of these entries by clicking on the entry title.

Title	Date	Category	Change	Delete
> A hard day's work	01.12.03	Private	Make public	☐
> Untitled	30.11.03	Private	Make public	☐
> What do I do???	28.11.03	Private	Make public	☐
> Elizabeth's tears	25.11.03	Public	Make private	☐
> 2nd visit	18.11.03	Public	Make private	☐
> Untitled	10.11.03	Private	Make public	☐
> Untitled	4.11.03	Private	Make public	☐
> Decision time	29.10.03	Private	Make public	☐
> What's worse?	28.10.03	Private	Make public	☐

[new entry](#) [delete](#)

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Hannah's shopping cart





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Hannah's resources

- > Home
- > My chat
- > My day planner

Public resources

- > News
- > Library
- > White pages
- > Yellow pages
- > Healthy lifestyle
- > Life management
- > Fun online



My shopping cart

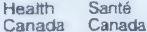
Here is the list of items you've placed in your shopping cart. You can view the details of any of these items by clicking on the item name.

Name	Rating	Qty.	Price	Delete
> What your doctor may not tell you about breast cancer by John R. Lee	★★☆☆☆	1	\$24.95 CDN	☐
> The cancer patient's workbook by Joanie Willis	★★★★☆	1	\$14.99 CDN	☐
> Lessons: Conversations with a breast cancer survivor by Judi Brand	★★★★☆	1	\$19.99 CDN	☐
> The complete natural medicine guide to breast cancer by Sat Dharam Kaur	★★★☆☆	1	\$69.99 CDN	☐

[proceed to checkout](#) [delete](#)

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Hannah's shopping cart: product detail





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Hannah's resources

- > Home
- > My chat
- > My day planner

Public resources

- > News
- > Library
- > White pages
- > Yellow pages
- > Healthy lifestyle
- > Life management
- > Fun online

My shopping cart: Item detail



★★★★☆

**The cancer patient's workbook:
Everything you need to stay organized
and informed**
by Joanie Willis

CDN \$14.99
Usually ships within 24 hours

The Cancer Patient's Workbook is an organizational guide to meeting the challenges of cancer. The book helps patients keep track of essential information in a practical format that ensures a clear understanding of what to expect at every juncture. The book also helps patients answer several questions including: What questions should I ask the doctor and when? How do I make sure that I'm getting the most appropriate medical treatment for my condition? Who pays for what? Where can I find the most reliable information on my disease? What are the best online sites and support organizations? A variety of worksheets help patients keep track of doctor visits, when to use medications, and what organizations to contact. A unique flip-off cover even allows patients to keep their workbook private if desired.

The author also maintains a website intended to help patients that have purchased the book to access all of the sites listed in the resources section of the book:
<http://www.cancerpatientsworkbook.com/>

Paperback: 224 pages
Dimensions (in inches): 0.78 x 11.12 x 8.14
Publisher: DK Publishing
1st edition: March 15, 2001
ISBN: 0789467828

This item:

- Return to shopping cart
- Proceed to checkout
- Recommend to a friend

Reviews:

Please take the time to let us know what you think about this book. Your comments will help us to rate this book for other readers.

- Read reviews
- Write a review

You may also be interested in:

★★★★☆
Living well with cancer

★★★☆☆
The chemotherapy & radiation therapy survival guide

★★★★☆
What to eat if you have cancer

★★★☆☆
Beating cancer with nutrition

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Sandra's news: detail







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Sandy's resources

- > Home
- > My news
 - > Today's feature
- > My day planner
- > My chat

Public resources

- > News
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- > Yellow pages
- > Healthy lifestyle
- > Life management
- > Fun online

My news: Today's feature

Mind-body medicine for cancer
Using mind-body techniques can enhance your quality of life, lessen pain, and may extend your longevity, say proponents.
 (27-10-03)
 by Carol Sorgen
 reviewed by Brunilda Nazario, MD

Cancer is one of the most feared words in the English language. A word that, as one cancer patient put it, is thought of by everybody in "capital letters."

"There are an enormous amount of reactions and emotions associated with having cancer," says Timothy C. Birdsall, ND, vice president of integrative medicine at Cancer Treatment Centers of America in Zion, Ill. "And many people are uncomfortable dealing with those emotions."

Because a growing body of research has shown that our mind has a powerful effect on our body, it's important to find an appropriate way to "access those emotions, release them, and reap the positive benefits on the immune system," says Birdsall.

That's the theory behind mind-body medicine and an increasingly important part of cancer treatment. Mind-body specialists, however, are quick to point out that mind-body medicine does not guarantee a cure. But it can affect what happens in your body, says Katherine Puckett, LCSW, director of the department of mind-body medicine at Cancer Treatment Centers of America's Midwestern Regional Medical Center.

"Using mind-body techniques can enhance your quality of life and may extend your longevity," says Puckett. "Having less pain, being more comfortable, that's a huge thing."

Treating the Effects of Chemo
 Cancer patients face many challenges, says Dan Johnston, PhD, assistant professor of psychiatry and behavioral science for Mercer University School of Medicine in Macon, Ga.

This article:

- Add to My Library
- Print
- Email to a friend

Reviews:

Please take the time to let us know what you think about this article. Your comments will help us to rate this article for other readers.

- > Read reviews
- Write a review

You may also be interested in:

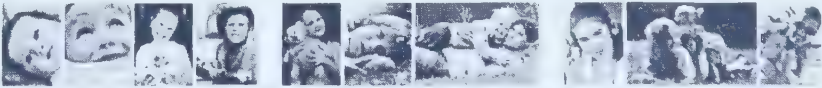
★★★★☆
 Breast cancers are commonly undertreated

★★★☆☆
 Less aggressive breast cancer surgery OK

★★★★☆
 Understanding hormone therapy for breast cancer

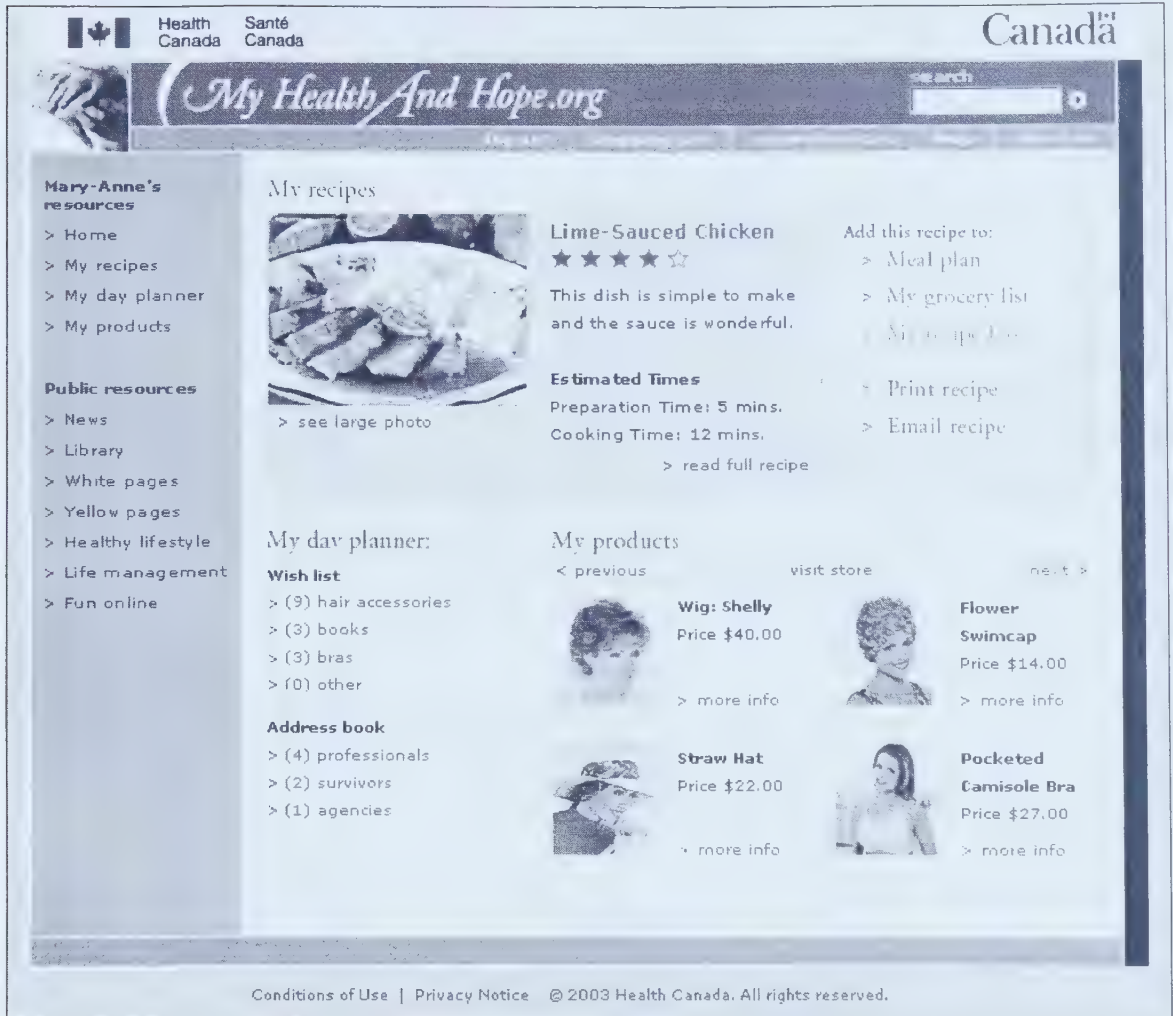
★★★☆☆
 Lumpectomy for large breast cancers?

1 | 2 | 3



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Mary-Anne's home page



Mary-Anne's recipes: detail



Health
Canada

Santé
Canada



search

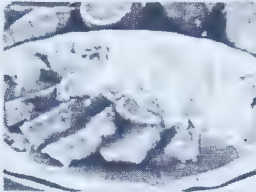
Mary-Anne's resources

- > Home
- > My recipes
 - > Today's feature
 - > My day planner
 - > My products

Public resources

- > News
- > Library
- > White pages
- > Yellow pages
- > Healthy lifestyle
- > Life management
- Fun online

My recipes: Today's feature



Lime-Sauced Chicken
★★★★☆

This dish is simple to make and the sauce is wonderful.

Estimated Times

Preparation Time: 5 mins.
Cooking Time: 12 mins.

> see large photo

Ingredients:

4 (4-6 oz.) fresh boneless, skinless chicken breasts

1 lime, juiced

3/4 cup Apple Flavor Premium 100% Juice

2 teaspoons cornstarch

1 MAGGI Chicken Bouillon Cubes

Directions:

Spray a large skillet with vegetable cooking spray. Heat over medium heat before adding chicken breasts. Cook for 8 to 10 minutes, or until tender,* turning to brown evenly. Remove from the skillet and keep warm.

In a mixing bowl combine lime juice, apple juice, cornstarch and bouillon cube. Add to skillet and cook, stirring, until thick. Spoon sauce over chicken to serve.

Add this recipe to:

- > Meal plan
- > My grocery list
- > My recipe box

Print recipe

> Email recipe

Please take the time to let us know what you think about this recipe. Your comments will help us to rate those recipes that most people find enjoyable.

> Read review

Write a review

You may also like


★★★★★

Hot Spinach Dip with Cheesy Chips


★★★★★

Oven Fried Honey Chicken

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L: GALLERY EXHIBIT MATERIALS

Web site critique entry page

i *web site critiques*

Select one of the options on the right to view the 1st page of each Web site.

To return to this menu, select the browser's HOME button.

> Web MD

> Canadian Cancer Society

> American Cancer Society

> Y-ME

Web site critique participant form: front



Web site critique

A Web site critique is an analysis of a Web site according to a set of parameters that are determined before-hand by designers, according to their information needs. These parameters are organized into a Web site critique template, through which the designer can maintain consistency and focus during the analysis process.

Examples of possible Web site critique questions are listed below. I invite you to experience conducting a Web site critique via this feedback form.

Name of Web site

1. What is the purpose of the site?
2. What is the content area of the site?
3. Who is the site for?
4. What level of technical sophistication is needed to use the site?

continued on the other side

Web site critique participant form: back



Web site critique

5. What is the tone of the site?

 6. Do you feel this site is professional or unprofessional?

 7. Does this site look credible or not credible?

 8. Would you use this site?

 9. Would you recommend this site to another person?

 10. Do you have any additional comments?
-

HTML prototype of *My Health and Hope* entry page

i *html prototype of My Health and Hope*

Select one of the options on the right to view the different sections of the Web application.

In the prototype, only the underlined links are functional.

To return to this menu, select the browser's HOME button.

> Splash page

> Hannah's page

> Sandy's page

> Mary-Anne's page

HTML prototype of *My Health and Hope* participant form: front



usability testing

Usability tests are often conducted one-on-one with members of the target audience. The researcher may ask the participant to navigate through the interface, thinking aloud while doing so. The researcher writes and/or records the participant's comments and movements through the interface. The researcher can also ask questions, or ask the participant to fill out a questionnaire. The researcher makes it clear that the interface not the participant is being tested.

Examples of possible testing questions are listed below. I invite you to experience participating in a usability test via this feedback form.

1. Do you feel this site is professional or unprofessional?

2. Does this site look credible or not credible?

3. Would you use this site?

4. Would you recommend this site to another person?

continued on the other side

HTML prototype of *My Health and Hope* participant form: back



usability testing

5. Do you have any additional comments?

Participant demographics

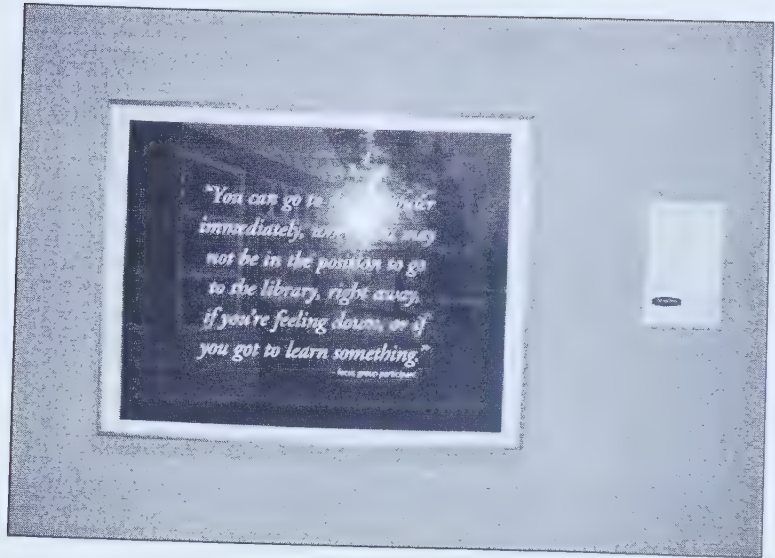
Age

Gender

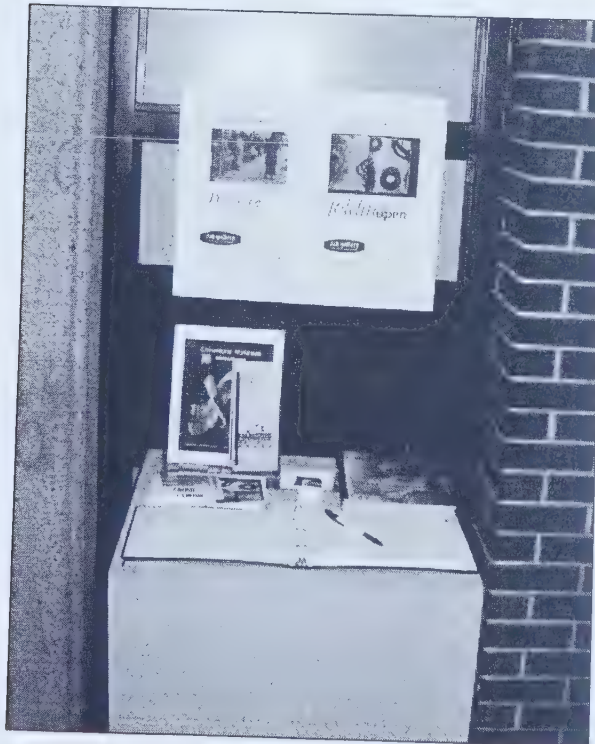
Occupation

M: GALLERY EXHIBIT

Entrance: Welcome poster



Entrance: Guestbook

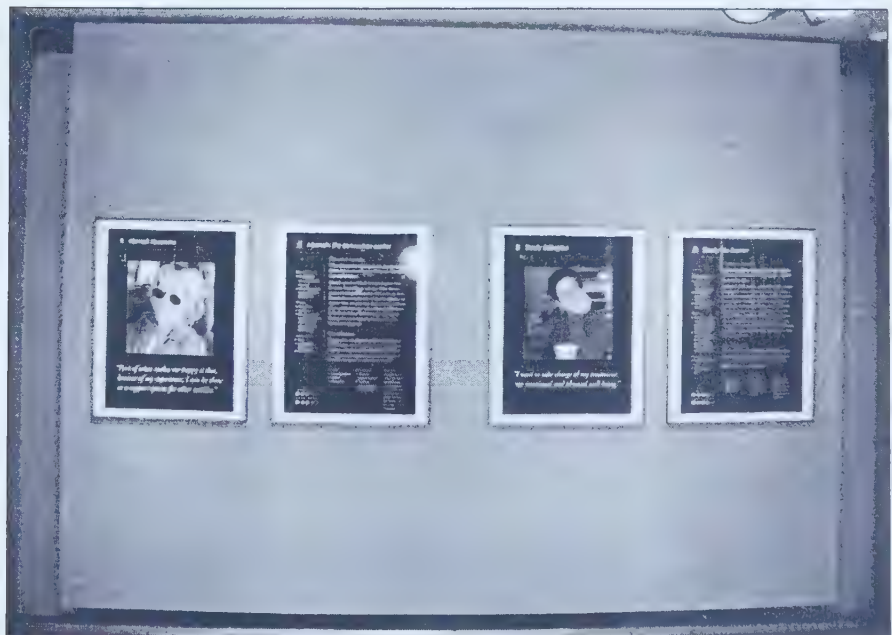


M: Gallery exhibit

Room 1: Design process and personae



Room 1: Personae



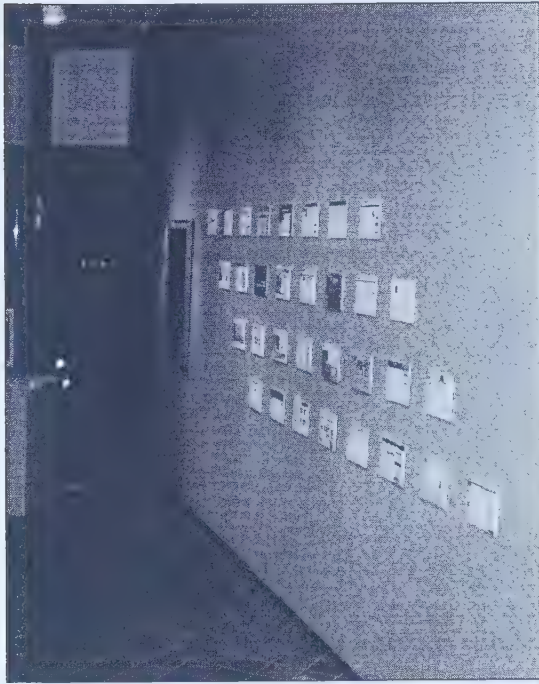
Room 1: Persona



Room 2: Literature review



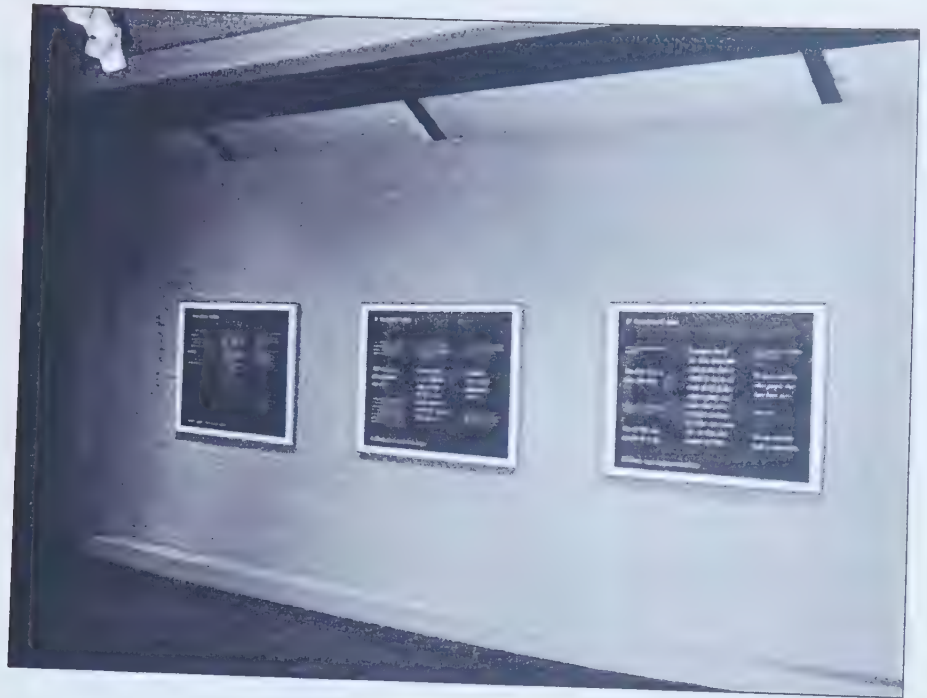
Room 2: Web site critiques



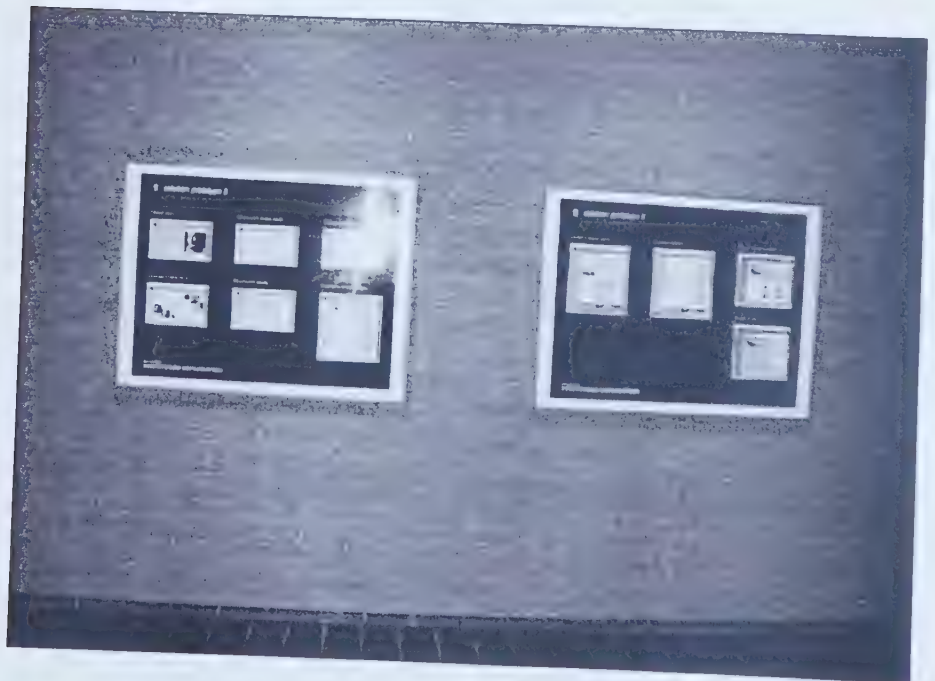
Room 2: Web site critiques



Room 3: Focus group findings



Room 3: Prototype 3



Room 4: Conclusion



Room 4: Future steps



Opening night



Opening night



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